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ABSTRACT

Planning learning activities for children is the focus of this kindergarten curriculum guide. Developed from 13 courses for kindergarten teachers and supervisors held at the Mount Carmel International Training Center in Haifa, Israel--attended by approximately 300 participants from 42 countries--the guidebook describes activities and methods for several kindergarten curriculum areas, including arts and crafts, music and movement, language, science, mathematics, and social studies, as well as play and games, and activities involving blocks, sand, water, and mud. In addition, the guide provides discussions of the nature of children, aspects of working with children, and the organization of the kindergarten environment. The planning of instruction, student evaluation, and parent participation are also described. The course prospectus of the Mount Carmel International Training Center, an overview of the development and effectiveness of parent education programs aimed at helping disadvantaged women educate their kindergarten-age children, and a brief report of a study of a parent/school cooperative program are appended. (Author/RH)

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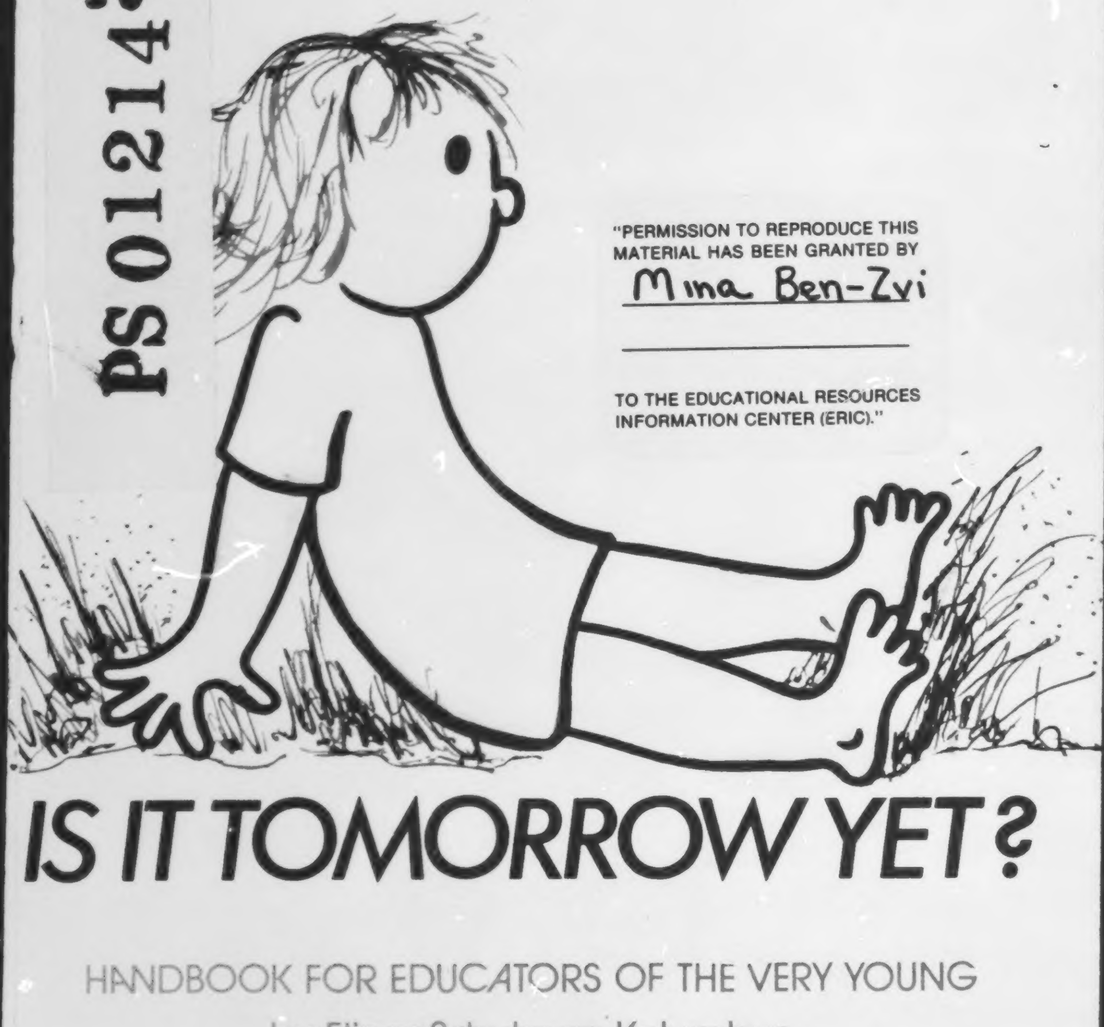

IS IT TOMORROW YET?

HANDBOOK FOR EDUCATORS OF THE VERY YOUNG

by Elinor Schulman Kolumbus

MOUNT CARMEL INTERNATIONAL TRAINING CENTRE FOR COMMUNITY SERVICES

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Contents

Preface iii

Introduction v

1. The Nature of Children 3

2. Working with Children 9

3. The Kindergarten Environment 17

4. Planning the Curriculum: What to Do and How to Do It

    Play 29

    Blocks 35

    Sand, Water, Mud 45

    Arts and Crafts 53

    Music and Movement 77

    Language 87

    Science 107

    Mathematics 125

    Social Studies 133

    Games 141

5. Planning and Evaluation 153

6. Parents 171

Bibliography 175

Appendix

    1. MCTC Course Prospectus 177

    2. The First Teacher 181

    3. Teachers Learning from Parents 186

Preface

The author, Elinor Schulman Kolumbus, a graduate of Indiana University and of Wheelock College (Boston, Mass.), U.S.A., and holder of a master's degree in Early Childhood Education, has been a staff member of the Mount Carmel International Training Centre since 1976. She based this Handbook on MCTC's training programmes for early childhood education, in which she has served as lecturer, tutor, and friendly counsellor.

Her direct personal involvement with participants from many countries and divergent cultures — from Asia, Africa, the Caribbean, and the Mediterranean region — enabled her to select material that is most relevant to educators of the very young.

The staff of MCTC is very proud to present her book as part of Israel's contribution to the International Year of the Child, during which world opinion is focussed, more than ever, on the conditions and the rightful place of the child in the society of today and as the citizen of the future.

Israel has been continuously concerned with early childhood education services, which before its independence, were provided mostly by women's voluntary organisations. Recognition of their importance led the authorities to subsidise the services conducted through volunteer action, and gradually to assume total responsibility for them.

The Mount Carmel International Training Centre for Community Services, since its inception in 1961 within the framework of Israel's programme of International Cooperation, has given intensive courses, study tours, and seminars in various subjects pertaining to community services. These have been attended by 2807 teachers, supervisors, and personnel engaged in community development programmes in 103 countries. On-the-spot courses, Field Work exercises, and Follow-up surveys have also been conducted in several countries.

MCTC has focussed on training programmes for early childhood education as integral to the development of the community. Over the years, 13 courses have been held for kindergarten teachers and supervisors, attended by some 300 participants from 42 countries.

It was felt that the practical experience accumulated during these years at MCTC would be of value to educators in other developing countries.

MINA BEN-ZVI

Director,
Mount Carmel International Training
Centre for Community Services

Haifa, May 1979

Introduction

Whether you work directly with the very young or with teachers of young children, this Handbook was written to serve you. It is meant to be a guide, to give suggestions and to stimulate the growth of your own ideas. But it should serve not just as a text of what to teach young children but also a reminder of who those children are — their capabilities and limitations, their ambitions and frustrations, their sadnesses and joys.

Throughout the text the term "kindergarten" is used to refer to children within the age range of three to five. This was done for the sake of convenience, since "kindergarten" has a different meaning in different parts of the world. Also for convenience the word "his" is used to indicate both "his" and "hers." Education is for girls as well as boys.

It should be understood that the term "room" or "classroom" is used in the text only to indicate the place where teaching occurs. Teaching and learning may take place indoors or out. Where you teach little children is not as important as the fact that you teach them.

Too many people, even today, are inclined to shrug off the importance of early childhood education with a pat phrase: "But they're only babies. They will have plenty of time to learn later," or "Tomorrow." For the young child who is ready to learn, this is not an acceptable answer. For him the concept of time is still very abstract; and as he waits he is likely to ask, "When is later?" and "Is it tomorrow, yet?"

Good teachers are desperately needed. People have been coming to the Mount Carmel International Training Centre from developing countries in order to participate in courses for kindergarten teachers and supervisors. You will see their photographs throughout the book. Most photographs were taken either of their practical work in Israeli kindergartens or during their field work exercises abroad. A few photographs were sent to us by former participants to show how they have set up kindergartens at home after completing their studies in Israel.

There are several people to whom acknowledgement is due for the help and support they gave me throughout the writing of the Handbook: primarily, the staff of Mount Carmel International Training Centre, for entrusting me with this challenging task and for the encouragement and assistance they gave me all along the way.

Specific contributions were made by Hannah Porat, who wrote the chapter on mathematics; and by Rivka Horowitz, Mina Shapira, Jacalyn Jacovayan, and Dr. Lynne Jasik, who provided consultation when needed.

I am indebted to A. M. Goldstein, the editor, who saw the manuscript through production.

A special thank you to my husband, Ami, who was so patient and understanding during the long hours of research and writing, and to my parents, who created in me a love for writing and for children.

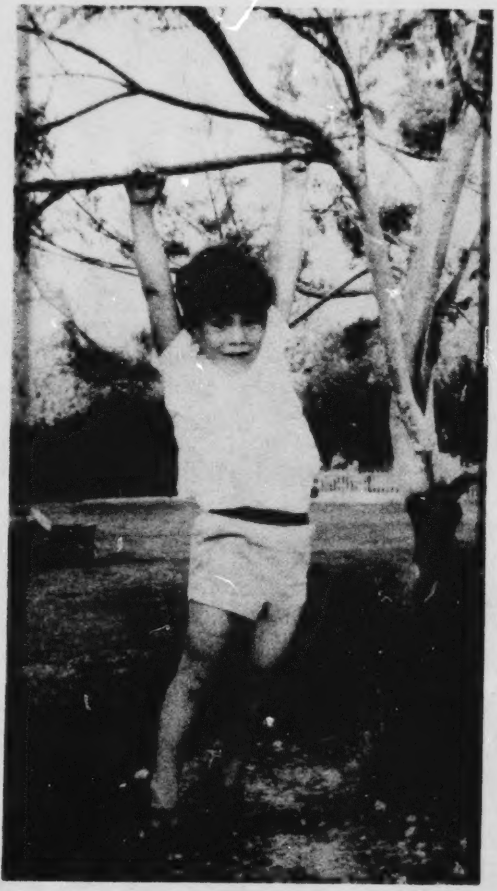
To all of you, my gratitude and appreciation. I hope that we shall have contributed, each in our own way, to the fulfillment and the happiness of young children everywhere.

ELINOR S. KOLUMBUS

Train a child in the way he should go ;
and when he is old, he will not depart
from it.

Proverbs XXII : 6

Children need exercise.



"Look at me!"

"I can dress myself."

Children also need quiet.

1. THE NATURE OF CHILDREN

It's a Matter of Opinion

(author unknown)

Some children are like wheelbarrows,
they have to be pushed.

Some are like canoes,
they have to be paddled.

Some are like kites,
if you don't keep a string on them
they will fly away.

Some are like kittens,
they're more content when petted.

Some are like trailers,
they're useless unless pulled.

Some are like balloons,
full of wind and likely to blow up
unless handled carefully.

Some are -
always dependable and cooperative.

Each child is different. That's what makes him special.

There are some basic things that all children have in common: they need love, security, good nourishment, and exercise. Every child needs to feel protected, accepted, and liked by others. Every child needs guidance and an element of control as he develops self-confidence and takes his first steps toward independence.

All children grow and develop along the same patterns. What is different is each child's personal time-table. Faster is not necessarily better. Each child grows at his own pace. Children develop in many ways: physically, intellectually, socially, and emotionally. A child may seem very advanced in one area, but less so in another. Take three-year-old Maria, for example. She has an outstanding vocabulary. She spends most of her school day poring over picture books and trying to decipher words. She can write her own name and tries to copy words that she sees. She is quick to grasp new concepts, and she uses the new knowledge appropriately. When, however, the other children go outside to play and to exercise their muscles, Maria cries and refuses to participate. Her body movements are awkward. She has many disagreements with the other girls and boys. Maria may be beyond her years intellectually, but she falls behind her peers in other areas of development.

Then there is Daniel, a five-year-old boy. Well liked, he is friendly and easy-going, with a winning smile for everyone. He is generous about sharing in both work and play, and is willing to listen to others. He cannot, however, listen for very long to a story. His attention span is short. It is difficult for him to sit for an extended period of time or to concentrate. Naturally, this affects his work. Although he is enthusiastic about most of the classroom activities, he finds it difficult to wait his turn. The processes of maturation and growth are not parallel in every aspect. At this point in his development, Daniel is much further along socially and emotionally than he is physically or intellectually.

Some people forget that a child is a whole person. They look only at his intellectual achievements; but the child's social and emotional growth in these early years are just as important as his physical and intellectual growth. Only if a child feels a sense of adequacy and belonging, can he feel free enough to allow himself to learn. The various areas in which a child grows are interrelated. The growth does not necessarily accumulate in a smooth and continuous fashion. There are periods of stability, followed by times of change - new growth, new things learned - and these are followed by a period of adjustment until stability sets in on the new and higher level. Each accomplishment prepares the child for the next stage of development. Regardless of the various differences in individual children, the journey is the same for everyone; all normal development leads in the direction of growing up.

Expanding Environment - Changing Behaviour

The children in your class were not always on as developed a level as they are now. As infants, they were entirely dependent upon others. Now they want to help themselves. Once they knew only a small world, the world that revolved about them. Now that world is expanding. Nevertheless, the child of kindergarten age remains very ego-centred, relating to everything he sees and knows in terms of himself. Notice his frequent use of "self" words: "I" and "my" or "mine." In these early years, everything in his world belongs or should belong to him, as far as he is concerned. It is "mine," "my ball," "my mommy," and "I want."

And yet, an environment that once consisted only of mother, father, and the immediate family has broadened. It becomes evident to the child that others exist also - many others. There is the neighbour who tends cattle, the man who sells vegetables, the barber who gives haircuts, the nurse who helps make people well. Now the child is exposed to still another new situation, school, and to another new adult person, the "teacher." And, of course, he meets a multitude of new faces of children.

The child's world is changing, and with it his behaviour. He must learn to deal with this new stimulation, to absorb and adapt to the new situation, people, and things. All this comes with experience. And how best to gain experience if not to try?

The child tries. He tries everything. He is in a rush to explore things, anxious to add each new achievement or bit of knowledge to his repertoire. The way in which he tries, or experiments, depends upon his age, level of development, health, cultural background, and personality.

It is impossible to say that a child in a certain age category, two, for example, will behave in one way, and on his third birthday will miraculously change into a more mature person, with a new set of abilities and behaviours. Every child is different and may be compared only to himself. There are, though, some basic similarities that broadly characterise each age group. A knowledge of these characterisations and an understanding of the needs and basic developmental patterns of young children will help you to set your goals accordingly and to provide the best possible programme for each class and each child.

The age at which a child comes to you, the teacher, depends upon the age children go to kindergarten or child-care programmes in the area where you live. In some places they begin at the age of five or six, in others as early as the age of two.

At two, children have already learned and achieved a great deal. They are walking, running, even climbing. Most have gained at least rudimentary skills in talking, and their vocabularies are expanding daily. Little by little, they are learning to communicate and to get along with other people. At the age of two, everything must be examined, tasted, poked, and watched. Some people call this a "go-go" age, since the child seems to be forever on the move. He is developing associations, perceptions, and a sense of self. Being very ego-centred, he is not ready to play *with* other children; instead, he plays *beside* them - parallel play. He is learning to be independent and wants so desperately to succeed that frequently he pushes aside adult interference with a very definite "No!"

In about one year's time, this same child will be doing his best to conform to established patterns, and to please you. "No" has turned to "yes." By now the child has much greater self-control. He is capable of giving as well as taking. He is learning to share and to show sympathy. There is an increase in his ability to play with other children. Praise this child and he will blossom.

As he blossoms into his fourth year, the child is once again off and running. Four year olds tend to go out of bounds. They do this both with actions and with words, displaying vivid imagination. These children are learning limits. This is also an age of great questioning. "How?" and "Why?" are frequently used words demanding explanations, information. The four year old is learning to do so many things that he is sometimes rather overwhelmed by his own accomplishments and wants to share the good news with whoever will listen. His words may sound boastful - "Look at me! I can swing from this branch!" "I know how to whistle. Do you want to hear?" "I got dressed all by myself today. Nobody even helped me." But the child is not really bragging. He just finds it hard to believe that he is becoming so "grown up." For the small child, being "big" is extremely important. Everything around him is made for grown ups - the height of the door handles, tables and chairs. He must sometimes climb high on a chair simply to see out the window. Encourage the child in his endeavours - and not merely with one over-all compliment. Relate to each new achievement separately, and with the interest and enthusiasm it deserves.

As another year passes, the child's interests broaden considerably. His thinking is much more concrete than before, but he is still full of questions. No longer does he go out of bounds, for he has gained a kind of poise and self-control. His body movements become progressively more coordinated. Socially, he has a group of friends with whom he can plan activities and carry them out. He is much more flexible than before.

And so the child continues to develop.

The Ladder of Development

When you are aware of the developmental process, you can see it displayed as the children work in every aspect of the curriculum. Take a child's use of clay, for example. A child who is very young or an older child who has never before had the opportunity to work with clay will first explore the medium. He will touch it, pound it, poke it, smell it. He will rub and squeeze it, getting to know its properties and what this material can do. Only then will he begin to shape it into forms by rolling it into a ball or into narrow, snake-like coils. As he gets to know the material still better, he will begin to create other forms by combining techniques he has already discovered. On the completion of a creation he looks at it; if it reminds him of something, he gives it a name - "Look! I made a ball."

At this stage, the names he gives his creations may change many times throughout the creative process as the object reminds him of one thing or another. When he is just a little more mature, however, he will decide in advance what he is going to make. At still a later stage of development, when he is more socialised, he will plan projects with a group. Together, he and the others in his group will carry out the plans. For example, they may create a miniature farm, each child moulding a different kind of animal from the clay.

The same sense of development can be felt by observing a child's reaction to a new or strange object. Initially, he will want to explore it, to discover its properties, and to learn what it can do. The very young child will go about this by putting the object into his mouth. One who is a little older will examine it differently. He may pick it up, feel it all over, shake it to hear if there is something inside. He may roll it or try to activate it in some way. A five or six year old will have a better understanding of how to categorise this object. He will perceive where it belongs and for what purpose it was intended. He can also recognise if it is dangerous and will then bring it directly to the teacher or to another adult.

Since each child is different from the other, each has his own unique personality and way of behaving. Note, for example, how he interacts with others. Is he rigid or does he compromise? Will he accept the opinions of others or does he always insist on having things his own way? Or, does he give in to others, never standing up for his rights? As you get to know the children in your care, you will come to learn and understand the nature of each child's personality and to identify where he stands on the ladder. To his parents the child is a source of joy, to his nation a promise for the future. Both have hopes and dreams for their children and are entrusting them to your care. The children, too, have their own personal hopes and dreams - and, if not deterred, want to learn and to achieve. Cultivate them wisely. No one can guarantee the future, but at least for the time that these children are in your care, it is up to you to give them the knowledge, opportunities, and warmth that every child deserves. You have an important job.

Sometimes, group work is best.

Other times call for a one-to-one relationship.

2.WORKING WITH CHILDREN

If a child lives with criticism,
he learns to condemn.
If a child lives with hostility,
he learns to fight.
If a child lives with fear,
he learns to be apprehensive.
If a child lives with pity,
he learns to feel sorry for himself.
If a child lives with ridicule,
he learns to be shy.
If a child lives with jealousy,
he learns what envy is.

If a child lives with shame,
he learns to feel guilty.
If a child lives with encouragement,
he learns to be confident.
If a child lives with tolerance,
he learns to be patient.
If a child lives with praise,
he learns to be appreciative.
If a child lives with acceptance,
he learns to love.
If a child lives with approval,
he learns to like himself.

If a child lives with recognition,
he learns that it is good to have a goal.
If a child lives with sharing,
he learns about generosity.
If a child lives with honesty and fairness,
he learns what truth and justice are.
If a child lives with security,
he learns to have faith in himself
and in those about him.

If a child lives with friendliness,
he learns that the world is a nice place
in which to live.
If you live with serenity,
your child will live with peace of mind.

With what is your child living?

(Written in 1954 by Dorothy Law Nolte for her column "Creative Family Living" in the Torrance (Calif.) *Herald*.)

Young children are very impressionable. As they are treated, so they will learn to behave and to respond. The person in whose care a young child is placed wields great influence upon him and can well help to shape the child's future. When you work with children, you have a serious responsibility.

Since you are already a kindergarten teacher or are planning to be one, you are probably the kind of person who likes children and can help to make their time spent with you happy and intellectually stimulating. The more you understand why children behave as they do, the more effectively you can guide them. Try to get to know each child, his family, and his background as well as you can.

The ways in which a child behaves are greatly influenced by his homelife. Does he receive a well-balanced diet, proper clothing, care and protection? Does he get enough sleep? All these environmental factors are reflected in his behaviour. On the other hand, a child's behaviour may be related to his stage of development - that is, he may be merely "acting his age."

Be kind to the children. Treat them with respect. Everyone, even a small child, deserves to feel a sense of dignity and worth. It is unkind to belittle a child or to make fun of him, for whatever reason.

Be fair to children. Answer their questions with honesty and as befits a young child. Promises also fall within the realm of fairness. If you do not intend to carry out a promise, then do not make it in the first place.

SECURITY

It is of utmost importance for the children in your care to feel safe and secure with you. For many, this is their first experience of being away from home and guardian. Some may have uncertainties and fears in their new situation. They will need to feel protected before they can be free enough to explore and to partake of all that a kindergarten has to offer.

Children who come from backgrounds in which their families are close and loving may be more ready to accept and embrace their new situations. Past experience thus far in their short lives has led them to believe that the world is generally a good place and that it is safe to trust in others.

On the other hand, children who come from backgrounds in which countless punishments and unhappy times have been the norm, may at first be suspicious of you and of their new surroundings. You will need to be patient with such children and to give them as much warmth and stability as you can. As a teacher, you can establish this sense of security in your kindergarten in several ways.

- *Provide a clearly defined physical set up* This means a logical and comfortable arrangement of the furniture and equipment in the room. If you provide specific places for items and activities, the kindergarten room will always have a semblance of order for the children.

- *Provide some items with which the children can identify* It will make them more comfortable if at the outset they see items with which they are familiar at home. For example, in the home corner you might provide a pot for cooking, a sieve, or other items that the children know; perhaps a pillow and a straw mat for resting their dolls, or themselves. For rural children, you might make farm animals from maize cobs or straw for the children to use in their play. The items you choose will depend upon the environment in which your kindergarten exists.

- *Establish a realistic schedule and routines* As children become familiar with the order of events in the kindergarten day, they will build up a sense of security in knowing what to expect. There should be a specific time for arrival, a time for meeting as a group, a time for working, for toileting, for eating. There must of course be a time for going home. The daily repetition of such "landmarks" provides the children with a sense of security and continuity.

- *Let children know in advance what is going to happen next and what is expected of them* Knowing what comes next helps a child to feel secure. Do not expect of the children things of which they are not yet capable.

Make your directions simple and clear; e.g., "When you come to school in the mornings, please hang your coats on your own individual pegs. Then you may join the group." "In five minutes, it will be time to clean up. Please finish your work." "When you finish cleaning up your area, you may take a book to read until everyone is ready for the story." Letting children know in advance what will happen helps the day run smoothly and can forestall difficult situations.

DISCIPLINE

Discipline involves guiding and giving direction to behaviour. The following suggestions may be helpful in this area.

- *If you establish rules or procedures in your kindergarten, be firm and consistent about enforcing them.*

Rules are made for the protection and well-being of a group or society. Since the kindergarten class is like a miniature society, the kindergarten teacher sets up certain rules or procedures that she thinks will protect those for whom she is responsible.

Children need limits and they want them. The rules should be logical and, if possible, show cause and effect. For example:

Rule "When you hold a pet, handle it gently."

Cause "If you squeeze them..."

Effect "... they will be hurt."

Children are most eager to obey rules if they understand the reasoning behind them. You can lead a child to conclude that certain rules or guidelines are necessary by asking leading questions: "What might happen to our pet guinea pig if we hug him too tightly and squeeze him?" The children can easily conclude that such behaviour is not desirable because "he might be hurt" or, more graphically, "he may cry."

- *It is not enough to reprimand a child. You must guide him toward acceptable ways of behaviour.*

As a child is learning controls and explores his limits, he sometimes may step over the boundary into misbehaviour. He may behave in an unacceptable fashion because he is frustrated. He may do so because this is his first experience with many boys and girls, and he has not yet learned to get along with others. A child may misbehave or get into mischief for many reasons.

When a child misbehaves, the wise thing is to condemn his deed, not the child. Try to reprimand in a way that he can learn from his mistakes. For example: Nadia was building a castle from blocks. Narni approached with a block in her hand and threw it, causing the structure to fall apart. You might in this case say, "Blocks are for building, not for throwing, Narni. Please apologize to Nadia and help her rebuild her castle." This approach is much preferable to: "You bad girl."

Sometimes disruptions are unintentional: Rina was carrying a pan of water in the home corner for washing the dolls' clothes. She filled the pan to the top and was in such a rush to begin that she did not notice Ofra walking out of the home corner. The two collided and most of the water splashed upon both girls and on the floor. A teacher could help Rina prevent such an incident from happening in the future by remarking, "Rina, you have filled the pan too full. What could you do next time so that the water will not spill?"

In this instance, the teacher has stated the problem, then guided Rina's future course of action by asking the child her opinion ("What could you do next time...?). Following through, the girls should be directed to dry off and Rina to wipe up the water. A comment might also be in order to show that the teacher understands and appreciates Rina's enthusiasm, but that she still must be more careful. All this is more educational than exclaiming: "You're so clumsy! Why can't you watch where you're going?"

- *Never embarrass a child by scolding him in front of his friends.*

If a child misbehaves, speak with him or her privately, away from the other children. Sometimes it helps to take a child away from the forefront of an activity so that he can step back and see the situation as an observer.

- *Guide the children by making positive statements. Tell them what to do, instead of what not to do.*

THIS	*NOT THIS*
"Let's listen to find out what happens next in the story."	"Don't talk now. We're reading a story."
"We shall all go out to play when we finish our snacks."	"You can't go out to play now. It isn't time."
"Use a separate brush for each colour of paint. The colours will stay brighter longer that way."	"Don't put your brush into all the colours of paint. You'll muddy the colours."

FREEDOM

- *Young children need an element of freedom, but freedom within limits.*

Give them choices to make so they can begin learning to make decisions, but limit the number of choices. Present only acceptable choices. Within this framework, you can allow a child to be quite free. For example, the child is not free to wander off outdoors unsupervised. Nor is he free to harm another child or another child's work.

He is free, however, to paint a picture, to build with blocks, or to practise matching colours in a game. These are acceptable choices. Exactly which choices you allow, and how many, will depend upon the children in your care, the number of adults responsible for them, the space available in which to work, and your own predilection.

- *There are occasions when no choice exists. If you do not mean to offer a choice, do not tempt the children by offering it.*

Assume, for example, that the children have just had a busy session of painting, pasting, and more. It is now time to clean up and to put things in order. If you ask them, "Would you like to clean up now?" you must be prepared to accept the fact that many may respond with a resounding, "No!" You have given them a choice by the way in which you expressed yourself. Since it is, indeed, time to clean up, a simple statement (not a question) will suffice: "It is now time to clean up and to put things in order."

In the same vein, the teacher who remarks, "Now, children, we mustn't throw sand, must we?" leaves herself wide open for an answer of, "Yes, we must!" She has formed a question when she meant to make a statement.

YOUR APPROACH TO CHILDREN

When you speak to the children, use a soft, gentle voice. Children learn by example, and *the way* in which you say things and relate to others will teach the children as much as *what* you say. Your patience, cheer, and natural fondness for children will all communicate themselves to them through your behaviour.

Show the children that they are important to you. Every child needs to feel that his teacher cares about him. Every child needs to know that he is somebody special. Find time every day to speak to each child and to call him by name. A sentence or two just for him will help to establish a warm relationship between you. ("Good morning, Roni. We missed you yesterday. Were you ill?" "What lovely shoes you're wearing, Dana. Are they comfortable?") As much as possible, too, bend or kneel down to the child's eye level when you speak with him, if this does not conflict with the norms of your culture.

All children need to feel successful. It is your job to provide them with the tools and direction. Some children may need special activities or help in order to be constructive. A child who is shy or hesitant will need to be encouraged. A child who is too boisterous and rough will need to be calmed down. When a child seems unusually apathetic or unusually aggressive, it may be that he is not being sufficiently challenged. Or it may be that the task is too difficult for him and he is frustrated. Help children to know success by giving them tasks that are within the range of their abilities.

It is important to observe the children in your kindergarten carefully to know what to provide for each and every one.

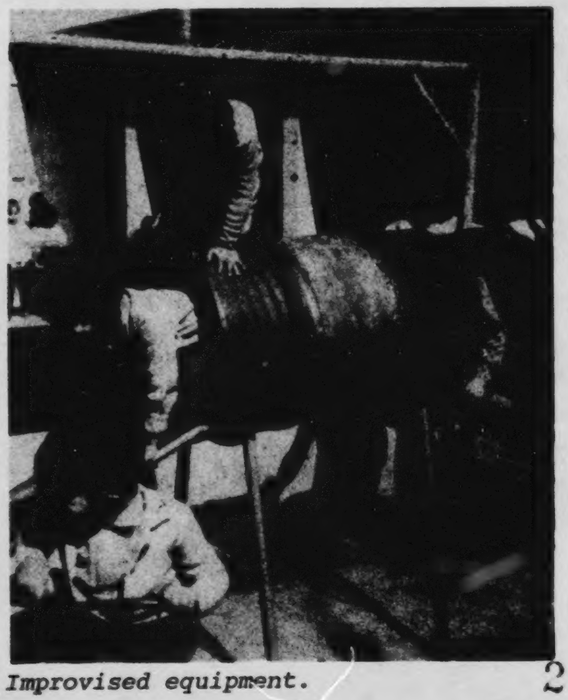
You should always have something prepared for the children to do, otherwise they will become restless and bored. The preparation, however, should be done in advance. When you are with the children, your concentration and attention should be focussed upon them and not on setting things up; get your materials and equipment ready for use before class time.

Do you have a sense of humour? Children enjoy humour. They like to share their own jokes and whimsies with you if you are a good listener. Likewise, they appreciate your humor. Nobody enjoys being laughed at, but the children will enjoy your laughing with them.

A WORD TO THE TEACHER

Take good care of yourself, both physically and mentally so that you will be healthy and energetic. One thing that a kindergarten teacher needs is plenty of energy. If this is coupled with a sense of equilibrium and calm, you are in fine shape for creating a stimulating and fruitful year for the children.

Outdoor environment.



Enclosed play area.

Improvised equipment.

3. THE KINDERGARTEN ENVIRONMENT

There are as many ways to create a kindergarten as you can think of. There is no *one* correct set-up.

Much depends upon your environment. Is your kindergarten in a crowded urban area? Or in a rural area with a lot of space? Do you have access to store-bought equipment and supplies? Or do you have at hand a wealth of materials that nature supplies - wood, shells, bamboo, rocks, etc. (If a new kindergarten is built, try to have the natural surrounding area left intact as much as possible.)

It is wise to locate the kindergarten within close walking or travel distance for those who will attend. If a child has to go too far to reach the kindergarten, he may not come at all. In rural areas where families live far from one another, travel time may of necessity be longer.

No matter where your kindergarten is and no matter what size it is, there are some important, basic factors to keep in mind.

INDOORS

ARRANGING SPACE

1. Think of the children's needs when you organise your classroom.

Healthy, growing children are very active. They need the opportunity and the space, to move about in order to develop their muscles. Wide-open spaces should be available for free movement, circle games, and large group meetings. Indoor space is especially important when bad weather restricts outdoor playtime. On the other hand, this space should not be so open that a child feels lost. If furniture is light and easy to move, your area can be versatile, with the furniture moved or rearranged according to need.

Another point to consider is the way in which little children interact with one another. Three-year olds like to play alone, even if it is side by side in a kind of parallel play. As the children grow older, they begin to relate to each other and to work and play in small groups of two or more. Sometimes the entire class meets together as one large group, and sometimes the child feels the need to be alone in a tiny, cosy space. For each of these instances, the appropriate setting must be arranged. You, as the teacher, must decide how this can best be done with the facilities at hand. Spaces can be arranged or adapted with low dividers, shelves or partitions, large boxes or crates.

First considerations are that the kindergarten should be physically safe, economical, and easy to maintain. It should also be comfortable for the children. Do not worry if your kindergarten is not yet as you would like it to be. You can gradually improve conditions as time and finances permit.

The room - best located on the ground floor - should have large windows for sufficient air and light. In some parts of the world, the windows and doors need to be fitted with screens to keep out insects. Sufficient wall space should be allowed for hanging pictures and the children's work.

There should be no sharp corners on furniture and no protruding nails. Handles or door knobs should be within the children's reach, and easy for them to handle. Take care that all electrical outlets are closed and that cords are safely out of the way. This is especially true when you have to use portable heating units to make the room warm enough on cold days, and fans to cool it on hot days.

Floors and walls, whether they are earthen, wooden, concrete, or stone, should be easy to clean and to care for, and suitable for your school's environment. If the floor is a wooden one, be sure that it is well sanded to prevent splinters (but not so polished as to be slippery). If you paint the walls of the kindergarten, use a light, soft colour with a non-glossy paint. (Caution: the paint must NOT contain lead. Lead-based paints are very dangerous for children.)

If your kindergarten is located in a noisy industrial area, a sound-absorbing material should be placed on the ceiling. One simple, non-commercial device is the use of egg cartons to line the ceilings. These can be painted attractively and must be sprayed or shellacked in areas where the weather or insects might be damaging. Mats on the floor are also sound-absorbing.

2. *Think of the curriculum needs.*

Some activities are quiet, others more active or noisy. Some are neat and some are messy. Separate physically the quiet activities from the active ones. Have a special area for messy work (e.g., finger-painting, clay work) where the floors and walls are easy to clean. Along with this, you should arrange your classroom according to clearly defined "interest areas." (Specific interest areas, or activities, will be discussed later, with their corresponding curriculum.)

To designate such an area, you need only to use imagination and the items at your disposal. Special areas can, of course, be arranged on shelves or tables, sectioned off by low room dividers. The borders of a mat can outline an interest area. The desired area can be drawn on the floor with a piece of chalk, or on the ground with a stick. Whatever works best for you in your situation is the best way. The guiding factor is that the space should be organised into logical sections. Such organisation helps children to classify and to organise their experiences. It also guides them toward independence in using and caring for the materials.

When planning the arrangement of the room, take into consideration the movement or flow of people in the room. Can the children move about easily in the classroom from one activity to the next? Are papers, crayons, and other supplies in the art area handy for use? Have you arranged a convenient place for putting finished art work - or must a child carry a dripping painting halfway across the room in order to set it safely to dry? Can a child who wishes to use the toilet go there without disturbing others? Thoughtfully arranged room space often prevents accidents and disagreements.

Study your room carefully after arranging it. All the space should be used to best advantage. But there is a second aspect to an organised room: being certain that it is possible to see all the areas of the classroom at a glance. Low dividers or shelves will give the sense of privacy and intimacy that a child needs. You as a teacher, however, are responsible for knowing where the children are at all times, and you must be able to see, with a quick scan of the eye, what is taking place in every part of the room.

3. *Think of the structure of the room itself.*

Your classroom itself will suggest certain schemes to you and at the same time pose certain limitations. Take into account where the sun comes in and where there is usually shade, and arrange the classroom accordingly. Activities that need light (drawing, pasting, picture reading) should be done near the windows.

MATERIALS, EQUIPMENT, AND FURNITURE

Materials and supplies should be simple and versatile. If an object can be used for many purposes, it is much more serviceable than if it can be used for only one purpose. Objects should also be flexible and sturdy enough to be used by either individuals or groups.

As for the type of materials, much can be done with local "finds" and ingenuity. A great many supplies can be made from discards or objects of nature in your own environment. The idea is to see what exists around you, then to decide how best to use it. For each such item, ask yourself:"What can I make from this? How can I use it in the classroom? What can the children learn from this? How can they use it purposefully?" A reverse approach is also helpful. Think of what you need, then look around your surroundings to decide how best to fill that need.

Kindergarten is for children. The kindergarten room is for children. It should be a place for happy times, for learning and enjoyment. All items hung on the walls should be for the children. Accordingly, everything - all display areas, bulletin boards, chalkboards - should be hung at the eye level of the child.

Be cautious of equipment bearing metal pieces that can rust, and of equipment that has sharp edges.

Each child should have a place for his own personal belongings, whether it be a furniture drawer or cubby, a large tin can or a cardboard box, a shelf against the wall or a sack or bag on the back of the chair. Many small children have few, if any, belongings of their own at home. Yet these early years are the ones in which a child begins to develop concepts of *self* and *identity*. It is important for each child to have a place of his own, even if it is only a sack or a can, in which to keep his private treasures and accomplishments - a picture that he coloured, a feather, a rock. He needs a place which has only his name on it to give the feeling that he, too, is important.

Where cold weather requires heavy outer clothing - coats, boots, and such - individual hooks or shelves should be provided for children to hang or place their clothing. Again, these should be at a level convenient for the children to reach. You can help them recognise their own hooks or shelf spaces by writing the child's name and pasting a distinctive picture or symbol beside the name. Each child himself could choose, cut out, and paste on his own picture or symbol. The child, who can already recognise the symbol will gradually come to recognise the spelling of his name, too.

Your own personal belongings, notes, calendar, etc., should be kept in a special place where only you, the teacher, can see them. Keep all cleaning supplies, medicines, and other potentially dangerous products in a securely locked place that children cannot reach or enter.

In some kindergartens children sit on benches. In others they sit on mats or on the floor or the ground. In some they sit on chairs. Regardless of what is used in your area, remember that furniture must fit the children. This furniture should be sturdy, but of a weight and size suitable for children. Sometimes people forget that children of kindergarten age are very small. A kindergarten room supplied with nice new furniture is not at all so nice if it is of a size fit for adults. When children sit on chairs or benches, their feet should touch the floor and not dangle in the air. And they should not have to reach up in order to use the tabletop. If possible, two slightly different sizes of furniture might be provided, to accommodate children of different heights. A local carpenter can be of help to you with this.

TOILET AND HANDWASHING FACILITIES

Toilet and handwashing facilities must be in particularly good hygienic condition and must meet the regulations of local health and sanitation boards. The premises must be kept clean at all times; failure to do so can be a cause of infection to children.

If possible, for every 15 children there should be at least one toilet and one handwashing facility (washbowl, basin, or, if running water is available, a faucet). Toilets should be located near the children's classrooms. "Accidents" do happen. An extra change of clothing should be kept on hand for each child in case he soils what he is wearing.

For hygienic reasons, each child should have, and use, his own towel. In fact, two towels are necessary, so that one is available for use while the other is being washed. Take care that towels are washed frequently.

Good lighting and ventilation will make the toilet area more pleasant. Mirrors placed near the handwashing facilities at the level of the child will encourage him to take notice of his appearance and to care for his cleanliness and neatness.

SLEEPING FACILITIES

If your programme is an all-day one, you will need to make some provision for sleeping, or nap time. This will vary according to the habits and customs in your country or your section of the country. In some places cots are provided; in others, mats or large towels on the floor. Some children can sleep only if they have a covering. Parents may be able to provide this.

The sleeping area may be part of the same space that is used for activities at other times of the day. This may entail moving some of the classroom furniture to provide enough sleeping space for the children. Regardless of your situation, remember that the sleeping area should be quiet, clean, and safe. It should not be so crowded that an individual child has difficulty in getting out to go to the toilet or in leaving quickly in case of an emergency.

Giving oneself up to sleep in a new place involves an element of trust. If a child is unwilling to go to sleep at first, do not scold him; stay with and support him until he is no longer uneasy. Sometimes it is calming for a child to hear a story, a record, or a soft song at this hour. If a child is accustomed at home to sleeping with a favourite object or toy, he should be permitted to do so in the kindergarten as well.

Whether the children merely rest or actually sleep, they should be made to feel secure at all times. Think of this and not only of the physical features when planning an area for sleep and rest. The health, as well as the comfort of each child, is important.

KITCHEN FACILITIES

If in your kindergarten the children attend for only half a day, you need minimal kitchen equipment for preparing light snacks. If the programme is an all-day one, however, a hot meal will need to be served, and this requires more extensive facilities.

In some places the food is prepared outside and warmed up at the kindergarten. In others it is prepared on the premises. The kind of cooking or heating device you use will depend upon where you live and the resources at hand. The cooking facility, no matter the type, indoors or outdoors, should be placed far enough away from the children to be safe, but near enough to provide for convenient serving. The kitchen area should be separate from the area where the children eat.

All dishes, eating utensils, and kitchen equipment must comply with minimum health and sanitation requirements. Washing dishes can be a problem in places where water is scarce. With so many children, however, one must be particularly careful about this. If you do not have hot running water, take care to boil the water. A thorough clean-up after each meal - by children as well as teacher - is necessary to prevent visits from mice or insects, and the possible spread of infectious bacteria. A rack, shelf, cabinet, or other provision should be made for storing the dishes and utensils when they are not in use. Detergents, soaps, etc., should be kept in a separate compartment from foods. Any dangerous cleaning agents should be kept out of the reach of children, or locked up.

OUTDOORS

Children need fresh air and exercise. Weather permitting, they should have outdoor experiences daily. Notify the parents that this is your practice so that they can send their children to school appropriately dressed. This means the kind of clothing that can withstand running, jumping, and boisterous play. Where winter brings cold weather, children should be bundled warmly enough to ensure their comfort out-of-doors for at least 20 minutes to one-half hour. In warm or tropical climates, the children — lightly dressed, of course — can spend a longer period of time outside. Areas of shade should be provided in any case.

Outdoor playtime is not a waste of time, as some parents are apt to suspect. This is a time for the children to develop their bodies and their coordination, particularly of their large muscles. It should be a time for pleasant social interaction among peers. If you observe the children carefully as they play outdoors, you may notice aspects of their personality which were not apparent during their indoor activities. Free play out-of-doors is as appropriate as organised games and instruction. Many typically indoor activities can successfully be brought outdoors to the delight of the children - story-telling, painting, and more.

If your kindergarten setting is one that lends itself to a first-hand study of nature, you are luckier than if you have to teach about nature only through pictures and books.

OUTDOOR SPACE

The outdoor space or playground should adjoin the building, and part of this space should have an area protected against strong sun or rain (by a shade or roof, large awning or tree) It should be enclosed by a fence or wall to prevent children from wandering off and also to keep outsiders and stray animals from entering. If this is impossible to provide at the outset, a temporary "fence" can be made by lining up a row of old rubber tyres, at the least delineating the permitted area in which the children can play.

A large grassy area makes a nice spot for games, and a paved area often permits outdoor play after a rainfall when the bare ground is still wet. The ground beneath all climbing equipment should be well protected by sand, bark, or soft mats.

The facilities you have for outdoor activities will depend upon the location of your kindergarten, financial resources, and permission from authorities. What you do with the outdoor area depends to a large extent upon your own initiative.

If possible, a storage shed would be useful for keeping portable outdoor equipment and materials that are not in use. This shed need not be elaborate, but it should have a lock to ensure that your hard-earned belongings do not become damaged or disappear overnight. A shed also protects the items from bad weather.

GARDEN

If you have the space, children can tend a small flower and/or vegetable garden (and can later cook and eat the vegetables they have grown). Through gardening, the children can come to appreciate the importance of working the land, the source of our food; learn to enjoy various kinds of vegetables which are healthy for them; and gradually influence their parents and the community to adopt better eating habits. Flowers enhance a garden, and a few freshly cut flowers and leaves add cheer to the classroom.

ANIMALS

Small animals or classroom pets are a warm addition to the kindergarten. Furthermore, learning to care for animals can be a valuable experience, developing in the children a sense of kindness and responsibility as well as providing opportunities for learning the characteristics and habits of the animals themselves. Some kinds of pets are kept indoors, others are better cared for out-of-doors. Certainly, any animals that are indigenous to your neighbourhood and those that are important to your people, whether for food, work, religious reasons, or simply as beloved pets, should be studied by the children. First-hand knowledge is always best.

If space permits, you might try raising rabbits, chickens, or guinea pigs (also known as cavies). Rabbits and guinea pigs, by the way, are "cousins" and get along quite nicely together for short periods, in the same living area. Raising silkworms is a fascinating project, as is seeing tadpoles grow into frogs. Fish are fun to watch and breed, and turtles hold a great attraction for small children.

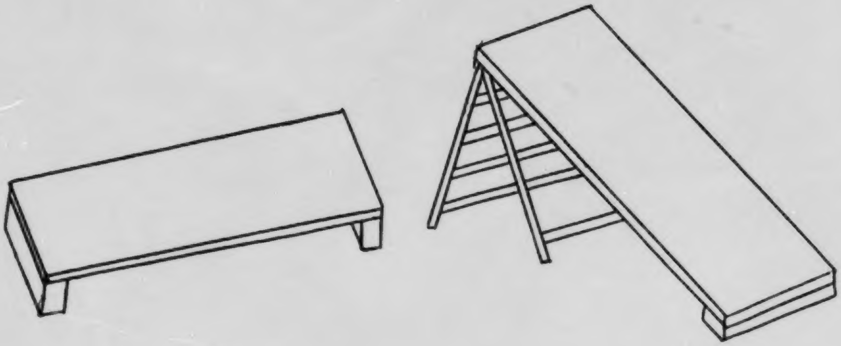
If you do have animals, do not keep them sectioned off as though they were museum pieces. With proper guidance, children can learn to handle the creatures carefully and wisely. Cuddling a soft and furry animal affords children - particularly frightened or shy ones - a sense of security and warmth. With a pet, a child can share his innermost secrets; animals are very good listeners and never give away secrets.

MATERIALS AND EQUIPMENT

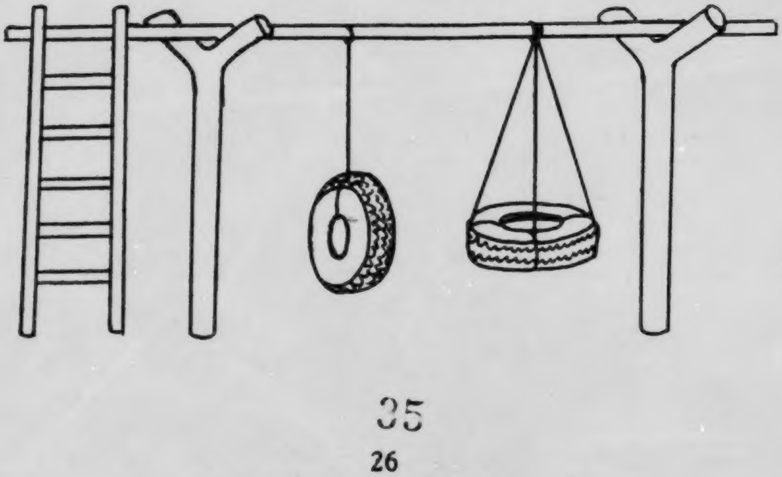
Some kinds of materials are open-ended, meaning that there is no end of possibilities and ideas for their use. Here, imagination is the only guide. Generally speaking, these materials are natural ones: earth, sand, water. (These will be discussed in greater detail and further on in the book.) Your expertise is called into play for using them wisely - and for not presenting too much at once. Indoors or out, cluttering with unnecessary equipment causes confusion and is distracting to the children.

Outdoor equipment should be such that children can climb into, onto, over, or under it. Sturdy boxes, cartons, crates, barrels, and boards are good for this purpose. They can be arranged by both you and the children to serve as props and as a stimulus to aid children in their dramatic play. At the same time, this equipment should engender the kind of physical activity that is so necessary for healthy growth and development. You might like to paint these props bright colours, or you may prefer the natural look.

Young children are particularly fond of jumping. A strong board can be placed on the ground for walking on or jumping across. If you hammer a strip of wood to act as a little leg at each end of a board, these legs can also act as a handle and will easily latch securely onto a ladder rung or low ledge to form a slide. Strong ladders of various lengths may be used together with such boards and crates.



The children should also have a climbing apparatus. It can be made from ropes and poles. Swings can be made from ropes and tyres. If there are swings, they must be placed in a safe area and the children taught precaution in using them. A swing, of course, is restricted to one or two children at a time, whereas a climber provides physical activity for many children at once. For both activities, remember that the ground beneath should be soft or covered with sand for safety in case of falls.



4. PLANNING THE CURRICULUM:

What to Do and How to Do It

Play acting in the doll corner.

Dramatic play.

"The doctor."

Play

Play is important for a child. It is the way he learns. Have you ever stopped to watch children at play? They are so busy, so intense - it is this active doing that enables children to learn.

In many kindergartens children sit for hours writing squiggles and mimicking the sounds of words. Since little children are still growing both in body and mind, it is not good for them to sit too long. They learn more and better through concrete experiences in which they can touch, examine, and manipulate real objects. You must get them up, activate,and involve them.

Children need to be given opportunities to use their imagination, to be allowed the freedom of originality. In their world of tomorrow, situations may arrive for which traditional solutions do not fit.

A child will learn much from a stimulating and varied play situation. What will he learn? When a child is working a puzzle, cutting with scissors, or pasting, he is developing his small muscles as well as his eye-hand coordination. Both will help the child when he is ready for reading and writing. If a child takes part in the building of a block structure, he is learning to cooperate with others, to express and accept ideas, to recreate his environment so as to know it better. He familiarises himself with geometric shapes, laws of balance, and more.

For a child, his play is his work, and adults must not belittle either the activities or the seriousness with which he carries them out. Rather, they should be pleased - for a child learns through doing. As an ancient Chinese proverb expresses it:

I hear and I forget.
I see and I remember.
I do and I understand.

FREE PLAY

Play is considered so vital to the physical and mental development of children that most teachers devote at least an hour of each day to "free play" indoors, in addition to a period of outdoor playtime.

Free play is not a "wild" time. It is a time when children have the opportunity to explore various media and to work at different tasks, either individually or together in small groups. It is up to each child to choose and participate in the activities that interest him.

Your role is to structure the play situation so as to give a rich variety of choices to the children. The choices may include blocks, an art activity, the housekeeping corner, or puppets, for example. You might have a table set up with puzzles or games, with small pieces for construction or manipulation. In another part of the room a science experiment could be taking place. Some children may enjoy leafing through picture books. Others may be watching a rabbit's nose wiggle as they feed him a carrot. Many activities take place simultaneously during the free-play time. But what is important is that the children are "free" to choose what they want to do among the activities available. They are free to move from one activity to the next without having to ask permission each time.

Initially you may need to help or guide the children to get settled in their work, especially if you have a large group. For example, in the morning you can discuss with the entire class which activities they may choose during the free-play time and what the limitations are. You might say, "There is room at the workbench for four people to work. When you are finished, please put your tools away and clean the area for someone else to have a turn. Who would like to work there first?"

As a child finishes one activity, it is his responsibility to clean or tidy up his individual space and to use his time wisely by going on to another activity. Sometimes a child may "wander." He may need a reminder, or your helping hand, in getting involved. Or, he may simply be taking time to observe and to decide on the next activity. Note whether some children tend to use the same materials day after day. Encourage them to try new things. You may need to show them how to cut with scissors, to string beads, etc.

Free-play time is a busy time, particularly for the teacher. But no matter how busy you are, be sure to look around the room frequently to be certain that all is in order and that everyone is working comfortably. Move about to see that everyone has the materials he needs for successful work; that sleeves are rolled up and aprons are on the children who are working with paints, water, or other activities in which clothing must be protected. Offer an encouraging word to the child who is frustrated, a calming word to the child who is loud, a lap for the child who is lonely or needs special attention.

If you do get the chance to sit down for a moment, take care to sit so that you are facing the class and can see as many of the children as possible.

Give the children about five minutes advance notice that clean-up time is near and that they should begin to finish their work. Those who are working on activities requiring a longer clean-up period will need even more advance notice. The clean-up time may take up to 15 or 20 minutes. Remind the children to look about them on the floor for any pieces of puzzles or games that may have fallen or paper that needs to be picked up. (Suggestion: Since it is very difficult to identify lost puzzle pieces, you might mark each piece on the back with the name or symbol of the puzzle to which it belongs - it will give you fewer incomplete puzzles at the end of the year.)

DRAMATIC PLAY

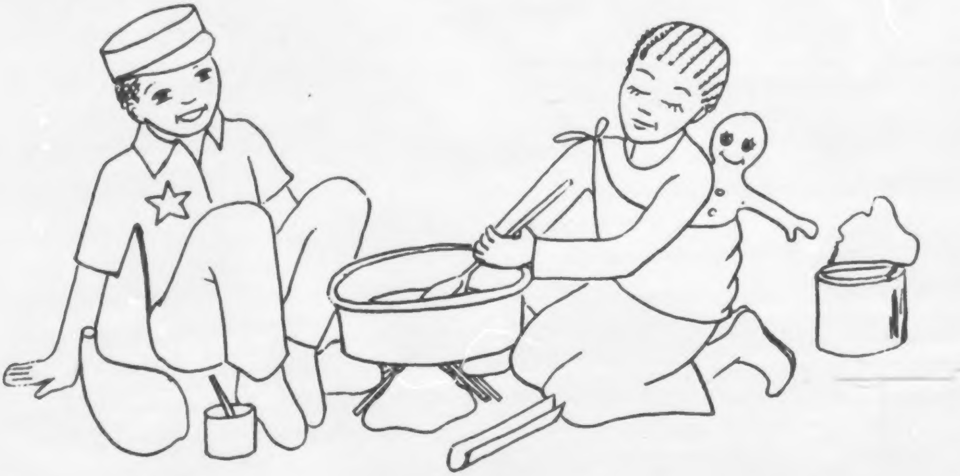
Little children are very busy growing up. Dramatic play gives them an opportunity to explore various roles, often of adults or people who are important in their lives. At this stage anything goes: a boy can be a "mommy" and a girl a "daddy." Roles are not yet so defined. This is a time for exploration, a time for taking in the world about them and making it conform to their needs or desires.

In the housekeeping or doll corner, an unwanted baby brother can easily be taken back to hospital (a block structure) and traded in for something more desirable, such as a toy truck. A "roaring lion" isn't the least bit scary. One simply gives him a cup of make-believe tea, and he swiftly becomes a docile, purring kitten that enjoys the petting he receives.

Anything can happen in dramatic play. As in other areas of the classroom, younger children often prefer to play alone while older ones are already interacting socially with one another and inventing complicated sequences of events and characters.

Dramatic play is free and stems from the children's imaginations. It is not to be confused with "theatre dramatics," which sounds similar but is usually teacher-directed and not spontaneous: acting out a favorite story in a formal way, for example. Dramatic play, which is spontaneous, can develop and take place almost anywhere, but usually blossoms in the block area, out of doors, or most especially in the housekeeping area.

You can encourage rich dramatic play by making and keeping on hand special kits, which are essentially small boxes filled with supplies for children to use in playing doctor, postman, farmer, garage mechanic, grocer, beautician or barber, etc. The kits that you make should reflect the life of the community in which you live. As the children use these props, the housekeeping area can be altered from time to time to suit the children's interests.



Most of the furniture of the doll corner can be made from sturdy boxes or crates. Dishes can be made from gourds, papier maché, or coconut shells. Be as imaginative as you like. For instance, take some scrap material and a piece of cardboard and make a "pretend window" to hang on the wall in the housekeeping corner; on the cardboard, draw a cheerful sun, and from the scrap material make curtains. Smooth stones can easily be potatoes or eggs. A mat on the floor is a fine bed. You may want to make a cradle for the baby dolls. Ask the parents to help by providing old hats, shoes, or clothing, both male and female (grown-up size for children, child or baby-size for dolls), to be used for "dress-up."

If at all possible, a real mirror should be placed on the wall of the housekeeping area. Seeing themselves, particularly during dramatic play, helps children to form a good self-image.

Children engage in dramatic play instinctively, but you can enhance the quality of their play by providing interesting experiences and by stimulating their imagination from time to time. The addition of something new in the housekeeping area - a broken clock, a few flowers or twigs artistically arranged in a plastic bottle - will do this.

Through careful observation of such play you can learn much about the children in your care. A child may treat a doll the way he is treated at home. Some children always prefer to play the role of baby. Others will fight to be "the boss." A child who has been sick may want to play "doctor."

Children need the opportunity to express themselves. They need the chance for learning to accommodate themselves to the grown-up world - to make that world, which may not always seem the most sensible or fair place, reasonable and understandable to them. Dramatic play can fill these needs.

Hollow blocks.

Props enhance block play.

Construction with unit blocks.

Blocks

Blocks are among the most satisfying and versatile materials a child can use. With blocks a child can work alone and still be within close proximity to other children, or he can share in a cooperative effort with one or more children. Blocks can give the child a strong sense of achievement and control. They provide him with a way of dealing with his environment, particularly with large structures (buildings, vehicles, etc.), which in real life tend to dwarf him.

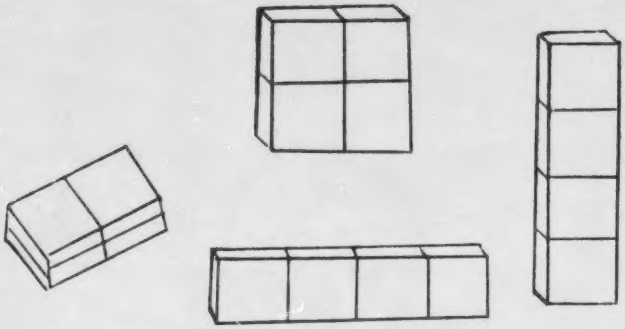
LEARNING FROM BLOCKS

There is much for a child to learn from blocks. He learns the properties of matter, size, shape, weight, and dimensions - thickness, length, and width. He can compare likenesses and differences and learn to classify or sort. You can guide him in this as he returns the blocks to their proper places. ("Let's take all the square blocks and put them away.")

By working with blocks, a child can learn to understand the concepts of balance, space, area, and volume. He experiments with sequence and pattern, and whole/part relationships. He studies the blocks and measures them to see which are longer and which are shorter - more than or less than or equal.

If you ask a child, "Can you take your building down without its falling down?" you are promoting his understanding of reversibility. A child can also come to understand the concept of conservation as he notes the same four blocks cover the same amount of space, regardless of their design.

Encourage children to talk about their structures as they build. In block-building activities, language and action begin to merge. Vocabulary increases as the children learn to differentiate prepositions (up, down, over, under, behind, below, top), adjectives (long, short, tall, thick, thin, pointed, smooth, angled, straight, curved), and nouns (names given to block structures, names of objects used in block play, names of shapes, signs). In addition, discussion about the blocks or the block-building activity often takes place among the children. Or, they may use the blocks to tell stories.



Four blocks cover the same amount of space, regardless of their design.

Social studies can come to life as children recreate with blocks their surroundings and other environments (e.g., *dzong**, temple, school, *moshav**, house, *wat**, *kraal**). Blocks can even be used for laying out different kinds of maps. Of course, aspects of art and esthetics are also an integral part of block building, for as the children use the blocks, they learn about form, harmony, balance, and design.

BLOCKS IN THE CLASSROOM

Blocks take up much storage space. A handy place for them, therefore, would be on something portable, which can easily be moved out of the way. Blocks of the same size and shape should be stored together. As a guide to help the children recognise where to return a specific block, you

* *dzong* – Bhutan: administrative or municipality area

moshav – Israel: agricultural collective in which the members own their own homes but share agricultural equipment

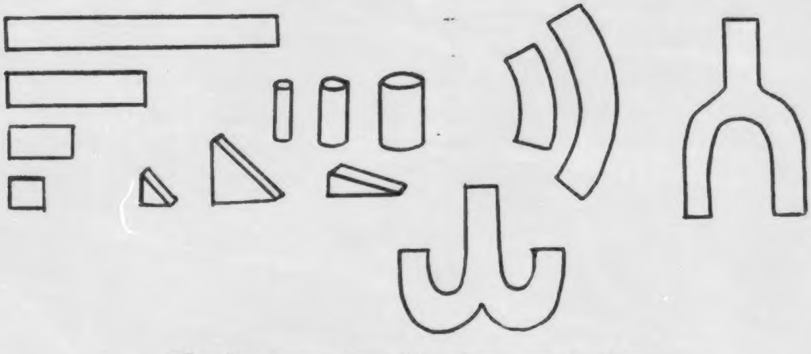
wat – Thailand: Buddhist temple and its surrounding compound

kraal – Southern Africa: a stockade with a central space for cattle might attach a drawing of each type to the place where that type block belongs. Or, instead, you may glue a sample of each type block to its proper shelf, since many young children find it difficult to relate a two-dimensional drawing to the actual three-dimensional object.

The storage space for blocks should be low and close to the area where the children will build. The area should be wide enough for comfortable building, yet far enough from the main traffic of the room so that structures are not in danger of being knocked over.

Since play with blocks can be a noisy activity, you might want to cover the block play area with a mat or a rug to help absorb the sound. Be sure that this area, if not covered, is free of splinters, pebbles, or other disturbing elements.

Provide the children with interesting materials to use with the blocks. Some suggestions: figures of vehicles (bus, wagon, bicycle, lorry); figures of animals that are familiar to the child (yak, elephant, water buffalo, horse, donkey, duck, etc.); figures of people in different roles (farmer, mother, baby, fisherman, etc.). The figures could be made from clay, banana leaves, maize cobs, and other such material. Or, they may be pictures cut out from a magazine (e.g., traffic signs, trees) and, glued to cardboard or wood, be solid and able to stand. Children may create their own props from lumber scraps, rubber tubing, boxes, sticks. Large cardboard cartons are particularly appealing to little children. Different kinds of material will suggest different building ideas to the children.



Blocks come in all sizes and shapes.

Do not tell children how or what to build. Use positive statements and show appreciation for a structure, but avoid over-emphasis. Children should not get the idea that they must make certain structures in order to gain your approval. They must, however, be aware of certain dos and don'ts when working with blocks. They will not learn the value of property if they are allowed to destroy it. If some children tend to be aggressive and throw the blocks, you might say to them: "Blocks are for building, not for throwing." Or: "You are not yet ready to play in the block area." Later, you may ask, "Do you think you can be more careful now?"

Children often give names to the structures they build. You might suggest making a sign to label the structure so that everyone can recognise it (e.g., "That's a fine looking structure. Would you like a sign for it?") Signs or labels give the children's work a sense of importance and also give meaning to letters.

Often a child will request that you write the letters or words of his sign for him. You should encourage this, since it promotes reading readiness in a very subtle way. On the other hand, try not to force the issue. If a child does take up the idea, he will gladly dictate the words of the sign to you. These may be just a label (e.g., Rambam Hospital or Ami's farm) or perhaps a message (e.g., Welcome or Private - Keep Out).

Clean-Up

Blocks take a longer time to put away than other playthings. Be sure, therefore, to give advance notice of clean-up time to children who are playing with blocks. If they have taken out many blocks, they may need as long as fifteen or twenty minutes to put them away. You can make the clean-up activity satisfying in itself by making it into a game or accompanying it with a song.

Encourage the children to take apart their creations one block at a time. A question such as, "What will happen to your blocks if we kick them down?" will guide the child to conclude for himself that proper care of blocks is important.

TYPES OF BLOCKS

There are several different kinds of blocks, each used for a slightly different purpose. Generally speaking, blocks fall into the categories of (1) *solid or unit blocks*, (2) *hollow blocks*, and (3) *table blocks*. All three types are usually - and preferably - made from wood, to be sturdy. In some countries, a hardwood such as elm or maple is used for unit and table blocks and a soft pine for hollow blocks. In other countries, all blocks are made from teak wood. If wood is not available, however, blocks can be made from cardboard cartons and boxes. Whether self-made or purchased, a strong set of blocks will last for years and will be well worth the investment of time or money.

Of primary importance is that all sets of blocks should be designed to form natural mathematical and geometrical relationships.

Solid or Unit Blocks

The basic and the most frequently used piece in the set is called the *unit block*. In addition, there are blocks *one fourth* the size of the unit block, others *one half* the size, some *double* the unit, and others *quadruple* the unit. Blocks need not all be rectangles and squares: there are pillars or columns, arches, wedges, triangles, and cubes. Each shape block relates to all others in size. (See end of chapter for suggested measurements.)

Blocks should be sturdy and have a smooth surface. If they are accurately made, they will balance and not topple over when the child attempts to build. The child combines blocks in various ways and in progressive stages, from the simple to the complex. This developmental sequence seems to hold true universally. Even an older child who has never had the opportunity to use blocks before will go through precisely the same sequence as a younger child, although more rapidly because of his coordination and maturation.

Developmental Sequence in Block Building

1. Familiarization

Initially, the child simply carries the blocks. He familiarizes himself with them, but does not yet build with them.

2. Towers and rows

(a) The child stacks blocks one on top of the other to form towers. He may pile the blocks so high that they fall, but repeats this action over and over again. Sometimes the child may knock the tower over. Actually, knocking the block structure over or watching it fall is often part of the pleasure of block-building for the young child. As in all other areas of the curriculum, what is important is the process and not the product. Even though children find delight in the release of pushing block structures over, certain limits must be set. A child should not be allowed to knock down another child's structure unless he first has that child's permission. If you feel a child's tower is becoming too high and may fall on him, or on other children, advise him to begin another pile.

(b) Children also line up blocks to make long rows. Sometimes they combine the rows with the towers.

3. *Bridging*

A child places two blocks on the ground and connects them with a third block (a "bridge"). He now begins to encounter construction problems.

4. *Enclosures*

The child encloses a space, often with four blocks, for example, to form the pen for a toy animal or the shape of a building.

5. *Patterns and artistic designs*

Children begin to create decorative patterns with the blocks; they become sensitive to balance, geometric patterns, and design.

6. *Representations*

Children build with a purpose. They name their buildings and often use them for dramatic play. As the need arises, children start to think more in terms of the details of their buildings - how to make windows and doors, for example. This involves an element of planning.

7. *Work as a group*

As the child matures and develops, he is able to work better in a group. By this time he has mastered the basics of construction and is willing to cooperate in complicated efforts to produce a particular structure. Now he builds each structure with a specific purpose in mind.

Hollow Blocks

Hollow blocks are larger and heavier than unit blocks. A young child will need to use both his hands to lift them. In fact, he will need your guidance to learn how to set the large blocks down carefully without dropping them. Show the children how to handle the blocks. They must grasp one at a time, whether for building or for taking apart structures. These heavy blocks should not be knocked over - since they could hurt someone. They are to be lifted down, one at a time.

By combining just a few blocks into very simple combinations, a child can quickly create a building or structure, which can lead to dramatic play. You can encourage this flow of activities by placing the block area near the doll corner or housekeeping area. This will also help to prevent the boys from "taking over" the blocks. It is as appropriate for girls to play with blocks as it is for boys. Vigorous block play is good for a child's large-muscle development.

Dramatic play with the large hollow blocks can be helped along with various lengths of boards or planks. Children are most imaginative in using these - for roofs, walking boards, sidewalks, ramps, and more. If planks are not available, a blanket, sheet, or large cloth placed over a block building makes a cosy hideaway. Other useful objects are short ladders, boxes, barrels, logs.

It is important to note that there is a basic difference in the imaginative play that comes from unit blocks and that which comes from hollow blocks. With unit blocks, the child manipulates the objects - toy animals, play vehicles, etc. With hollow blocks, the child is the actor: he does not put the nurse in the hospital, but he is the nurse (or dog, father, policeman) who enters the hospital structure. Each kind of block, then, serves a different purpose.

Table Blocks

Sets of smaller blocks may be fun to use at a table or on the floor. Sometimes a child prefers handling the small pieces and finds more satisfaction from them than from the other kinds. As with unit blocks and hollow blocks, accessories will enhance the play.

STANDARD BLOCK SIZES
used in Israeli kindergartens

Type of Block	*Details of Construction*
Solid Blocks	40 units (18 x 9 x 4½ cm.)
150 blocks in the set	20 half units (9 x 9 x 4½ cm.)
	16 double units (36 x 9 x 4½ cm.)
	16 roof slabs (36 x 9 x 2½ cm.)
	4 large cylinders (height 36 cm. x thickness 9 cm.)
	4 small cylinders (18 x 9 cm.)
	8 triangles (base 18 cm. x height 9 cm. x thickness 4½ cm.)
	6 pillars (18 x 4½ x 4½ cm.)
	6 triangular half units (9 x 9 x 4½ cm.)
	4 half circles, 4 quarter circles, 4 elliptical arches (36 x 4½ cm.)
	4 interior arch sections
	4 rounded arches (length 18 cm.)
	4 gothic arch segments (18 x 8 x 4½ cm.)
	4 large arches (18 x 9 x 4½ cm.)
	4 gothic arch interiors
	4 rounded arch interiors
Shelf for blocks (natural-finish, closed back)	height 80 cm. (plus 9 cm. high leg) x width 120 cm. x depth 20 cm.; one shelf 40 cm. from top: lower section divided into two compartments
Hollow Blocks	8 units (50 x 12½ cm.)
set of 36, constructed from plywood (frames 10 cm. thick, sides 4 cm. thick; natural wood, lightly oiled)	8 pillars (50 x 12½ x 12½ cm.)
	8 half pillars (25 x 12½ x 12½ cm.)
	4 cylinders (40 x 12½ cm.)
	2 equilateral triangles (base 50 cm. x height 25 cm. x thickness 12½ cm.)
	2 gates (50 x 25 x 12½ cm.)
	1 trapezoid (50 x 25 x 12½ cm.)
	6 boards (50 x 70 cm.)

Towers and rows.

At the water table.

Sand play in a kindergarten.

Sand, Water, Mud

What could be more fun than a mudhole on a hot, humid day?

Mud is very nice to feel
All squishy-squash between the toes!
I'd rather wade in wiggly mud
Than smell a yellow rose.

Nobody else but the rosebush knows
How nice mud feels
Between the toes.

— Polly Chase Boyden

Children, who are constantly being reminded of the do and don't of manners, good behaviour, and keeping clean are particularly delighted with the opportunity, in an acceptable and supervised situation, of getting their fingers and toes into mud - and water - and sand. Unless already familiar with the benefits of these media, parents (and teachers, too, sometimes) are often aghast. Why would one deliberately introduce the use of water, sand, and mud into a curriculum? There are many good reasons.

Children have a natural inclination toward these media, which are probably the most natural play materials that exist. Water and earth are basic to our very existence. They provide food, energy, and power; but they also provide enjoyment, relaxation, and calm. Children are especially attracted to water. As babies they enjoy splashing in their baths, and when older are attracted by puddles after a rain. All three - sand, water, and mud - have the remarkable quality of soothing the nervous, aggressive, or explosive child, while stimulating the shy or inhibited one.

A child who during free play tends to flit from activity to activity, unable to concentrate on any one thing, is sometimes so quieted by the experience of sand play that, afterward, he is able to settle down and work with deep concentration for quite some time on other endeavours.

Perhaps you hesitate or even object to providing sand, water, or mud activities for young children. You may dislike the thought of the mess it will make; or perhaps you feel that water play is wasteful, that water should be used only for drinking and bathing. In some places water is scarce, and in some places it is polluted and must be filtered or boiled before use. Admittedly, these conditions make its inclusion in the curriculum more difficult, although they do not reduce the value of water play.

Perhaps you know teachers who do not provide such play – what are their reasons? Is it simply that they do not know how? You may, on the other hand, have observed teachers who feel very strongly that children should have rich experiences with all these materials, which are so closely linked to earth. Work with sand, water, and mud helps to develop a closeness to, understanding of, and respect for nature and for those who work the land. In addition, the unique qualities of these natural materials teach scientific facts (e.g., floating, freezing, rust) at first hand, and encourage scientific curiosity and exploration.

With these natural materials, as with most classroom materials and subject matter, the children's activities and understanding develop from the simple level to the complex. Initially, they play with the medium, exploring it and becoming familiar with its properties. Later they learn to pour carefully, to measure, and to weigh – which require a more developed eye-hand coordination. Using these materials, the children are able to compare and to create rather sophisticated projects.

WATER

Water is a clean material to work with and is particularly appealing to young children, who are naturally fascinated by it. Research on water play with kindergarten children was conducted in Israel at the Study Centre for Children's Activities, at Oranim, the School of Education of the Kibbutz Movement.

Water Table activities (indoors) were investigated in all five classes of diverse populations of children. This work lends support to our belief in the educational value of this tool. Jewish and Arab children, children from cities and children from villages, Beduin children and Kibbutz children, children from disadvantaged backgrounds and children from affluent backgrounds, deaf children and children with unimpaired hearing – all are involved in the Centre. For all, the Water Table area constitutes a bustling activity centre that is diversified and surprising, popular and enjoyable, instructive and *challenging. It arouses the children's curiosity and is a vital learning situation.*

– Activities in the Water Table Area of the Kindergarten, *Gideon Levin, Publication No. 17, 1977, Study Centre for Children's Activities, Oranim — School of Education of the Kibbutz Movement, Kiryat Tivon, Israel, p.7.*

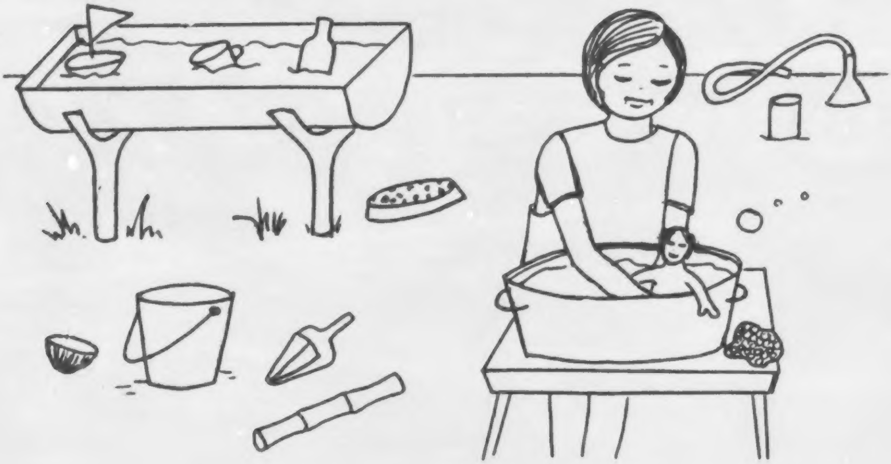
Activities with water can take place either outdoors or indoors. If indoors, it is wise to cover the working area with a plastic cloth or other available covering – a large sheet of cardboard or layers of newspapers, for example. It is also helpful to keep a sponge or cloth nearby for wiping up spillage.

Children who work with water must protect their clothing by rolling up their sleeves and putting on a water-proof apron or smock. Simple aprons that fit comfortably over a child's clothing can easily be made from plastic.

The children should not bring water to an indoor water area without adult supervision. If a child accidentally spills water, it is his responsibility to wipe it up immediately with a sponge or cloth provided for this purpose. Equipment to be used with water should be kept on a shelf or tray, or conveniently located near the water play area – well within reach of the children. To promote independence, a child should be allowed to take and use such equipment as he needs it; but when he finishes using it, he should either put it back into its place or else pass it on to another child. Fresh, clean water should be provided for each day's use.

The kinds and amount of equipment you provide for the children will depend on where you live and what you have available. Often the most successful materials are simple articles that, if unaware of their many uses, one might tend to discard or throw away: plastic bottles and cups (the clearer or more transparent, the better); corks; funnels; strainers and sieves; plastic or rubber tubing; gourds or calabashes;sea shells; coconut shells; spoons; shallow pans; sticks and twigs; bamboo; tin cans (no sharp or protruding edges; make holes in the bottom of some); bottle caps and jar lids; empty nut shells; balsa or other light wood. Metal items should be rust proof. Never use glass containers, for the obvious reason that glass can break.

A water play area or water table, at which children stand and work, may be devised from plastic or metal tubs placed on tables (about 58 cm. high) or from a tyre cut in half or even from a bucket. Regardless of what you use, it should be low enough for small children to use comfortably. A large water table lends itself more to social interaction among the children, but if this is impossible to devise, you can give several children small individual dishes for water play. The size of the water table is not as important as the fact that the playthings to be used with it should be suitably sized to fit inside.



No matter how many things you think of to do with water, the children will surely think of more, for the possible activities with water depend very much upon your imagination and the amount of energy that you are willing to spend. Children can experiment with water by pouring, measuring, syphoning, pumping. They can use water for floating home-made boats of cardboard or cork.

They can blow soap bubbles. A concentrated solution of soap (see recipe) added to the water will encourage bubble blowing. A bit of glycerine or sugar will make the bubbles hold longer.

Soap Solution Recipe

3/4 cup liquid soap
1/4 cup glycerine or sugar
2 quarts water

The addition of food colouring or non-toxic dyes to the water will stimulate the children's imagination to create new activities at the water table. Since little children are more accustomed to sucking in than to blowing out, you will need to remind them to blow out, or even to practise blowing bubbles with them.

You may want to use water in the housekeeping area for bathing dolls and washing the dolls' clothes. And, of course, water is for science - as food for plants, and for learning about irrigation, fishing, boating, or weather. The children can note the properties of water; gather rain water; observe what happens to snow or to ice cubes placed in a warm spot; test objects to see which sink and which float.

SAND

Play with sand is a free enough activity to allow children to engage in solitary, parallel, or group play, as they prefer or as they are emotionally able to do. Besides having a calming effect on children, sand is very stimulating for muscle movement.

No materials or props are needed for work with sand. The child needs only his hands or feet. Certain items, though, could be used to extend the activity: containers for holding sand (buckets, plastic bottles, boxes), implements for digging and scooping (spoons, short-handled shovels or spades, coconut shells, sea shells, calabashes, strainers). These items should be kept near their place of use.

A sandbox or sandpile can be any shape or size. What you choose or design depends on the space you have available and your preferences. For instance, you can fill a tyre or inner tube with sand to make a small sand pile. (A large tractor tyre will serve more children than would an ordinary automobile tyre). You can dig a hole in the ground, line it with bricks, and refill with sand. If possible, an outside sand area should be big enough for the children to climb into. Be sure to provide sitting places around the edges for children who are not yet ready to immerse themselves wholly in the activity. Well-sanded wooden planks or boards will do well. Sand can also be put into tubs placed on tables or on the ground.

If your sandbox is located out of doors, it should be placed in the shade or protected by a roof. If used indoors, precautions must be taken to protect the floor or working area by covering with plastic, cardboard, canvas, newspapers, etc.

The sand should be very fine and clean. Coarse sand is not as pleasant to handle. If you live near a beach or shore, you can collect the sand yourself, otherwise you may need to order it. For advice on where to get fine sand, check with places that make plaster or concrete, since it is an ingredient that they use. When you fill the sandbox it is best to leave some space at the top. If it is too full, sand will spill out as the children play. To keep out animals, it is advisable to cover outdoor sand boxes when not in use. Dampening the sand from time to time will make it pleasanter to work with. Like water, sand can be measured and weighed. Its granules can be examined under a magnifying glass. A magnet will pick up small particles of magnite (mining ore) in the sand. Children delight in adding water to sand for rivers and dams (and in the process can learn about earth science and even geography).

The natural flow of activities that invariably takes place in the sandbox area leads to cooperation and discussion among the children. Dramatic play is also stimulated. They sing and chat to themselves or with one another, all of which is good for developing their language skills.

You will need to teach the children some basic rules for working with sand: The sand must remain in the sandbox. It is not to be thrown,for it could blow into someone's eyes or mouth. Nor is it to be eaten. Only "sand toys" or "sand tools" are to be used in the sand; other classroom equipment is not allowed, since either the equipment itself or the quality of the sand may be damaged. When the children are finished with any sand equipment, they must put it away themselves.

Children who play barefoot in the sand should wipe their feet before going indoors. Those who wear shoes should empty the sand from their shoes before going inside.

MUD

Mud can be used indoors in tubs or outdoors in its natural environment. (An outside digging area should be placed away from the garden).

The utensils and ways of working with mud are similar to those for sand and water. Mud can be used as a kind of fingerpaint on paper, with the child able to mix his own to the consistency that he desires. He can mould mud into flat rectangles and other familiar shapes. If clay is expensive or unavailable you can mix a kind of dough from mud which has a pleasant texture and may serve the same purpose as clay, though it cannot be preserved.

Mud Dough

2 cups mud
2 cups sand
1/2 cup salt
Add enough water to make the
mixture mouldable.

When working with mud, children must be appropriately dressed with apron or smock. Be sure, too, that they are clean before they leave for home.

Water play: alone and side-by-side.

Using an easel

What shall I draw?

Weaving.

Making play-dough.

Arts & Crafts

Art materials are all around us. Children discover them naturally and begin to express themselves artistically long before they start going to school. Every time a child swirls his hand through sand and draws pictures with his finger, he is creating. Every time a child scrapes a stick across the ground to draw pictures or symbols, he is forming representations of the world as he sees it. Whether they draw with charcoal on pavement, sticks on the ground, or with crayons on paper, children all over the world use whatever medium they have in their environment to express themselves.

"Child art educators have observed that children of every cultural, national, ethnic, socioeconomic or religious group, anywhere in the world, go through the same stages of symbolic representation." (Hilda Lewis, *Art for the Preprimary Child*, p. 76.) From approximately one and a half to two years of age, they scribble with no particular meaning intended. Later, the child starts to represent what is important to him in his environment - trees, houses, and especially the human being. When he begins to draw scenes (anywhere from five to seven years of age), the child tends to divide the background into three parts - the bottom (earth); the top (sky); and the middle, where the child draws whatever he chooses.

Sometimes a child's art work may not appear very attractive to you. To the child, however, it is very significant. His outlook is different from that of an adult. He is not as interested in the final product as he is in the *process* of achieving it. By repeating the process over and over again, a child learns to refine his skills and to gain confidence in his abilities. For this reason, children should be given a variety of art experiences daily. They should also have the option of repeating basic art experiences throughout the year: drawing, pasting, and cutting.

Here are some ways to keep art activities interesting and stimulating for the children:

- Vary the medium (paint brush, chalk, crayon).
- Vary the background (newspapers, cardboard, broad leaves).
- Vary the shape of the background (cut paper into circular shapes or other geometric forms, into the shapes of fruits or vegetables, into the shapes of animals).

When a child uses art materials, he uses them in a child's way. Allow him to explore and to develop his own original ideas. Avoid giving the children models to copy. It inhibits their initiative and thought. In an unspoken way it says, "This is what the teacher thinks is important and good." Since the children will want to please the teacher, they will begin to copy your ideas and to stifle their own.

Take note if the children in your classroom tend to make the same types of creations day after day. They simply may need to be exposed, or reawakened, to different stimuli than those they usually encounter. A nature walk can provide stimulus - and encourage the children to talk about what they see. Visit a local marketplace or the village carpenter. Stop to look at crops in the fields. The sights and sounds and smells, whether of the city or of the village, are there to experience the moment you and they step out the door.

If you cannot go outside, invite a community elder to the classroom to share with the children tales from long ago.

There are many ways to stimulate a child's imagination. What he knows and experiences will come out in his artistic expressions.

INTRODUCING ART

Freedom of expression is desirable in art work, but basic knowledge of how to use, and care for, art materials is also important. For the children to learn, it is best to introduce the materials gradually. In art, as in other aspects of the curriculum, overstimulation breeds chaos. Even after the children have learned basic art skills, they should still not be presented with too many choices at once.

Art activities might start with crayon and paper, paste and scissors. Little by little, you can add brush painting and modelling with clay or dough. When the children are comfortable with these materials, it is time to use your imagination to present stimulating and intriguing art experiences. Remember to vary the media, the background, and the shapes of the backgrounds. For example, there is no rule that a child must paint on a piece of paper every day. Collect a series of cardboard cartons and have the children paint them. They can then cut out or paste on windows and doors to these - or line them up like a train and sit in them. Wonderful dramatic play could take place there.

Take your art activities outdoors. Let the children "paint" with water on a chalk board or on the sidewalk and watch the pictures they make disappear as the sun dries them up.

Moulding and sculpture can be done with clay or dough, but did you know that you can also use sawdust (see page 70)? You can even use snow. And paint it, too!

Part of the success of an art activity depends on the way you set up the space and on the condition of the materials to be used. (It is always advisable to experiment with a material yourself before giving it to the children.) Brushes should be clean, scissors oiled at the pivotal point. Paste should stick and glue should flow. If you work with wood, saws should be sharp and nails strong and straight. It is exasperating to hammer a crooked nail. Check the condition of the paints from time to time; if muddied or dried up and cracking, they are not very enticing.

When clean-up time arrives, everyone should help put things away. Running water or a pan of soapy water, together with towels, should be available for washing and drying hands.

You should not refrain from an activity just because it is messy. Every activity has its purpose. Simply take precautions in advance to be sure that the children roll up their sleeves and cover their clothing with an apron or smock. These can be made from plastic or from old, adult-size shirts. The child should not remove his apron until after he has cleaned up both his place of work and himself. Sometimes a child takes the utmost care to protect his clothing during the art activity but forgets to do so during the clean-up.

Constructive Comments

The comments you make about a child's art work can have more impact than you may realise. Be careful not to criticise or to make comments that might halt a child's work or that encourage uniformity. If everyone painted the same brown cow or pasted the same red apple with one green leaf to the right side, what a dull art experience this would be. Give the children a chance to experiment, to try out their own ideas. Do not badger the children by asking, "What did you make?" or "What is it?" The child may have simply enjoyed the process of creating, with no particular purpose in mind. He is learning to use the different media; and when he is sufficiently skilled and mature, he will of his own accord indeed create with a purpose in mind. Any demand for identification of his creation puts the child in a dilemma; he may make up any name, however unrelated, in order to satisfy you.

Children are very discerning. If everything you comment upon is "pretty" or "nice," the children will learn to distrust your judgement. They know that not everything is pretty or nice. It is always better to be honest, in a helpful fashion. Comments about texture, colour, or shape can be helpful, as can comments about the way in which a child is working:

- "What cheerful colours you have chosen."
- "I can see that you are working very carefully. You are doing very neat work."

What if a young child is encountering difficulties? If he is struggling when learning to cut with scissors, you might offer, "Shall I hold the paper for you as you cut?" If a child has trouble in making a realistic representation of something, you can help him best not by making it for him, or even by suggesting that he do something easier, but by guiding him with questions. For instance, if he wants to make an elephant but does not remember exactly what it looks like, you might ask, "Is an elephant fat or thin? Does it have a tail? What kind of 'nose' does an elephant have? Does he have little ears like you and me?" Such questions will help the child to envision the elephant that he wants to make.

Provide spaces for a child to place his finished art work: two-dimensional media (drawings, painting, collage) can be hung to dry or stacked on frames or racks. Three-dimensional media (modelling sculptures made from clay or dough; construction sculptures from wood scraps, styrofoam, or boxes) will require more room.

Find a place on all art works to write the date and the child's name. If he can write his own name, encourage him to "sign" his work. Display every child's work at some time, even if it does not appear attractive to you. It is important for a child to see that you value him.

TWO-DIMENSIONAL MEDIA

DRAWING

Crayons

Large, fat crayons are best for little children. They are stronger than the standard-size crayons and easier for little hands to grasp. Have several containers, each with a variety of colours, spaced about the crayoning area so that the children can easily reach the colour they want.

Drawing with crayons is usually done on white or coloured paper, cut to a workable size. Newspaper, lightweight cardboard, and the discards from printing shops can also serve as backgrounds. The drawing paper should be kept on or near the tables or the area where the children are working. The tables should be covered with newspaper, a plastic cloth, or some other covering.

Crayons can be held and used as one holds a pencil. If the paper wrappers are removed, children can experiment with using the sides of the crayon to colour. When crayons become broken or so used that only small pieces remain, they are no longer suitable for young children. Very small crayons are frustrating for kindergarten children because they require the coordination of small muscles, which strains their abilities. (Save these broken bits in a separate container. Later you can melt them with paraffin to make candles.)

Chalk

Chalk, held and used in the same way as crayons, has a special texture of its own. If coloured chalk is expensive or unavailable, charcoal can be used as black chalk. In areas where this material is abundant, the children can gather it from the ground. If you use a wood-burning stove, you can save the cooled-off burnt or charred pieces. Charcoal can be used for drawing on all kinds of paper, including sandpaper.

To prevent chalk or charcoal from rubbing off, dip the pieces in buttermilk before each use; a fixative spray can also be made by mixing one part shellac or lacquer with three parts alcohol. Another possibility is to use the chalk or charcoal on wet paper. At first, the colours will appear as a dull paint, but as they dry the colours brighten.

As with crayons, the table or working area should be covered.

CUTTING AND PASTING

The activity of *cutting with scissors* provides good exercise in concentration, eye-hand coordination, and the development of the small muscles of the hand. Be certain that the edges of the scissors are blunt and not pointed.

Children who have never used scissors will need to be taught how to hold them. They should keep their thumbs up, and use the scissors by opening them wide and then closing them. They continue this two-step action as they move the scissors forward. While this may seem obvious, such a basic explanation is often necessary for some children. You may have to aid a child by holding the paper securely at an appropriate angle so that he can cut more easily. Gradually he will learn to do this for himself.

If they have never used scissors before, children will enjoy experimenting with them. They often begin by making tiny cuts all around the paper's edge. When they master the techniques of cutting, they will then be ready to use this new skill for making things. At this stage, however, the process is more important than the product.

If scissors are not available,the children can enjoy tearing newspaper, magazines, cardboard, or discarded factory papers into small pieces. Pasted down, the pieces make wonderful collages and mosaics.

Paste is one of the easiest and most useful items to make and keep on hand. Every country and culture has its own way of making paste, depending on its resources. In the Far East, rice flour is used; in many African countries, maize flour or cassava.

When presenting paste to children, divide it into small containers that the children can share. This is better than putting it all into one large container which is difficult for everyone to reach. Paste can be spread with anything from fingers to twigs. You might want to keep handy a small dish with a damp cloth or sponge for wiping fingers.

RECIPES FOR PASTE

Wheat Flour Paste

Ingredients:

1 cup flour; 1 cup cold water; 2¼ cups boiling water

- Directions:

Mix the flour with the cold water. Stir until smooth. Add the boiling water and stir. Cook over a low heat, stirring constantly until the mixture is smooth. Remove from heat. Cool and store in covered jars in a cool place. (If desired, add one teaspoon of powdered alum before removing the mixture from the heat, and 3/4 teaspoon of oil of wintergreen or peppermint for a pleasant aroma when the mixture is cooling.)

Cornstarch (maize flour) Paste

- Ingredients:

    2 tablespoons cornstarch or maize flour (rice flour may be substituted); cold water; boiling water

Directions:

Add enough cold water to the cornstarch to make a smooth paste. Add boiling water until the mixture turns clear. Cook over a low flame, stirring constantly until the mixture thickens. Remove the mixture from the flame. Cool and store in a covered container in a cool place. (This kind of paste is good for use on cloth or thin paper, since it does not show as much as the wheat flour paste.)

Cassava Paste

- Ingredients:

    cassava; water

Directions:

Peel the cassava. Soak the cleaned cassava and cut into pieces. Soak in water, just covering the pieces. The following day, grate the pieces of cassava. (You will find them softer after having been soaked.) Squeeze the grated cassava through a sieve; then heat the cassava, adding a little water from time to time. Mix into a smooth, liquid paste. This amount of cassava paste will last for about 3 days. Keep in a cool place.

Collage

Collage is an activity of pasting or gluing objects onto a background to form a picture or design. Frequently used backgrounds are paper, cardboard, burlap (crocus bag or yutta), and wood. It is also possible to use unusual backgrounds from any number of sources - old laboratory X-rays, for example.

By providing a variety of items to paste, you give children many opportunities to become familiar with different textures, colours, and forms. Use your imagination to find materials. Egg cartons can be torn or eggshells crushed and pasted onto the background. Other suggestions for collage materials: feathers, sand, dried grass or weeds, fabric, even maize husks.

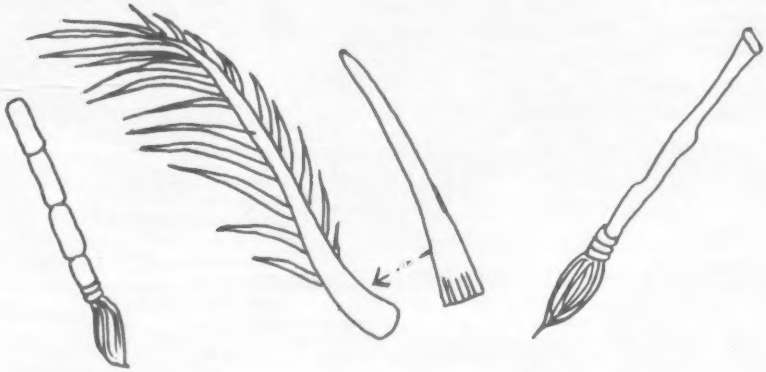
PAINTING

Painting may be done with different tools on a variety of backgrounds with home-made or shop-bought colours.

Show children how to dip and wipe the brush.

Brush Painting

Long-handled, large brushes are usually the easiest for small children to control. Their coordination is not yet developed enough to handle small brushes comfortably. Brushes can be made from bamboo, palm branches, sticks, or twigs.



The paper for brush painting should be a large size so that the children can use wide, sweeping strokes. Place the paper against an easel or else flat on a table, the floor, or the ground. Whichever you choose, protect the painting area with newspapers or a plastic cloth. If you are painting outdoors, fewer precautions are necessary.

Choose a quiet area for painting, one which has adequate light and is out of the way of bustling activity. The area should be arranged so that the children can be independent in their work, even as far as lifting their finished works unassisted and putting them in a designated place to dry.

Anyone who paints should wear an apron or smock to protect his clothing. The children will be more likely to wear the protective garments if you hang them near the painting area. To ensure that excess paint will drip back into the container and not onto shoes or the floor, show the children how to wipe the brush on the inside rim of the paint containers. Always keep a damp cloth or sponge nearby, in case of spills.

Children will enjoy painting with the full spectrum of colours even before they know the names of these colours. When you begin teaching colour concepts, however, introduce only one colour at a time - and no more than one colour on the same day. Begin with the three primary colours - red, blue, and yellow. Later add black and white. Each of the different colours should have its own brushes so that the colours do not get muddied or mixed. Explain to the children that the "red brush" stays in the red paint container, the "blue brush" in the blue, etc. After they know their basic colours, children can explore mixing colours.

As they paint, praise children for their achievements, even very small ones. Encouragement and a positive attitude can give children a strong impetus toward achievement in painting as in other activities. When a child finishes a painting, sign his name (or have him do it if he can print or write). If you add the date, also, it will be interesting for you, and the parents, to look back over the child's work and note the changes and development that took place with time.

At the end of each painting session, be sure to clean the outside of the paint containers with a damp cloth or sponge and cover securely. This will prevent the lids from sticking and the paints from drying out.

Children should be encouraged to help in cleaning the brushes. If gouache paint (see below) is used, the brushes should be cleaned in cold water. For stronger paint or lacquer, a thorough cleaning with turpentine will be necessary. (Turpentine should be handled only by the teacher.) Place the clean brushes upside-down in an open container to dry, or wrap them in newspapers for storage.

Types of Paint

The most commonly used, shop-bought paint is gouache, or tempera paint, sold in liquid or powder form. Usually a small amount of water must be added to the paint; but to keep these paints dripless and smooth, substitute liquid starch for the water.

If paint is expensive, buy just a small amount (preferably the primary colours) to use as a base in making your own paints. Food colouring will serve the same purpose.

Homemade Paint

- Ingredients:

  1 cup liquid starch; 6 cups water; ½ cup soap;
  paint or food colouring

71

Directions:

Dissolve soap in water and mix well with starch; add a few drops of food colouring or paint. Adding soap is useful for two reasons: (1) it causes the paint to adhere better to surfaces; (2) if paint should splatter on clothing, the soap helps to wash it out very easily.

Colours can be made from natural sources: from crushed berries and leaves, charcoal, flowers, roots, and bark. When these items are boiled, the colour usually becomes strong, dark,and rich. When using leaves - the more you crush, the deeper the colour. Squeezing the leaves after crushing them will make the colour even stronger.

Here is a table of colours that can be obtained from natural ingredients.

Colour	*Ingredient and Process*
Red	Boil geranium flowers or the crushed red leaves of bouganvillea. Beet juice also gives a tone of red. (Bouganvillea sometimes yields purple).
Blue	Washing blue (a chemical often found in detergents).
Indigo	Morning glory flowers.
Yellow	Banana leaves.
Green	Soak green leaves in cold water (for light green); boil green leaves after crushing them very hard (for dark green); other shades of green can be made from sweet potato vines and leaves.
Brown	Coffee or tea - the thicker the mixture, the darker the colour.
Orange	Lichens or fungus plants (sometimes this produces a shade of brown).
Black	Charcoal or ashes ground and mixed with paste (in order for the colour to stick to paper).

Spatter Painting

Have the children lay grasses, leaves, pebbles, or whatever in a design on a piece of paper. If they then dip an old toothbrush or vegetable brush into paint, hold a small screen over the paper, and rub the brush across the screen, the paint will spatter onto the paper. They should continue to do this until the paper is completely covered with one or more colours of paint. When the children remove the original objects, they will see the resulting design.

If screening is unavailable, the same activity can be performed by using the flat side of a comb or by rubbing a finger across the underedge of the brush. Paint drips less if the brush bristles are far apart.

Sponge Painting

Cut sponges into easy-to-hold pieces. There are several ways for the children to use them:

- Dipping a sponge into a shallow container of paint; then sweeping or twisting the sponge over a piece of paper.
- "Painting" one side of a sponge with a brush; then using this painted side for printing designs.
- Wet paper and smooth down on a table; using a stick or brush, drip puddles of paint onto the paper; soak up the puddles with a variety of sponge pieces; an interesting design will remain.

String Painting

Take a string about 35 cm. in length. Dip it into paint and draw it across paper in different directions. Twine, yarn, fishing line, cotton thread, rope, or cotton cording can also be used.

Reed or Straw Painting

Drop small puddles of paint onto paper with a brush or spoon. Hold a reed or straw near the paper in the direction you want the paint to go. Blow through the straw or reed and watch the paint move and scatter about the paper. Do this from several angles to create attractive patterns.

Print Making

Many items in your environment can be used for printing - bottle caps, the tines of a fork, small blocks of wood, and empty thread spools, to name a few. You can also use vegetables - potatoes, carrots, others - into which you can carve a design. Dip the item into thick paint (or apply the paint by brushing it onto the object), then press it onto paper, cardboard, or cloth to make a "print." Repeat the process many times to create a pattern. Half an onion or lemon can also make attractive prints, as can maize cobs and bamboo cylinders.

Finger Painting

Finger painting is a good way for a child to express his inner feelings. It is a "safe" means of expression, since he can quickly wipe away whatever he draws, leaving no traces for anyone else to see. For this reason finger painting is often used with troubled children, although all children find it a delightful activity.

Because finger painting is a messy activity, the children will need to wear water-resistant aprons and to roll up their sleeves. You will need several buckets of water and a towel handy for clean up. Cover the tables or work area with a plastic cloth. If the table tops are formica or another washable material, the children can finger paint directly on the table.

Before beginning the activity, wipe the table top or plastic covering with a wet sponge or cloth. If the working area is covered with newspapers and the finger painting is done on paper, wipe each individual piece of paper. In this instance, you will need to write the child's name on the back of his paper before laying the paper down and wetting it.

Place a few teaspoons of finger paint on the table (or paper) in front of each child. He should then mix the colours with his fingers, his hands, or however he prefers. (A child who is afraid to try painting with his fingers can begin by using a small stick or twig.) As the child swirls the paint around, he can create and wipe away as many pictures as he likes. After a design is made and decided on, the child can "pull a print" of it: lay a piece of paper over the painted surface, then peel it off.

A child may work for a long time on one finger painting, completely changing it numerous times because he enjoys the sensation that the medium provides. When he is at last satisfied, he may put this painting up to dry and begin another. As with other forms of learning at this stage, the child is more interested in learning how to do things - that is, the process - than he is in a final product. This is the reason that he happily "destroys" his designs over and over again with a sweep of the hand. This is his time for experimenting.

Finger paint is a special type of paint which can be bought, or you can make it yourself. Following are four suggestions for making your own.

FINGER PAINTS

- Ingredients:

  1 cup laundry starch; 1 cup cold water; 3 cups soap flakes; colouring (food colouring, or gouache or tempera paint).

  Directions:

  Mix the starch, water, and soap flakes together until smooth, then add enough colouring to achieve the strength of colour desired.

- Ingredients:

  1 cup laundry starch; 1 cup cold water; 4 cups boiling water; 1 cup soap flakes; ¼ cup talc (talcum powder) (optional); colouring.

  Directions:

  Mix the starch with the cold water. Add the boiling water. Cook until clear, stirring constantly. Add soap flakes and, if desired, talc. Beat (with an egg beater) until smooth. Add powder paint, gouache, food colouring, or other colouring. Mix together.

- Ingredients:

  2 cups flour; 2 tablespoons salt; 3 cups cold water; 2 cups hot water; colouring; liquid soap.

  Directions:

  Mix the flour and salt. Gradually pour in the cold water. Beat until smooth. Add the hot water and boil until clear. Add colouring and a little liquid soap.

- Ingredients:

  ½ cup cornstarch (maize flour); cold water; 4 cups boiling water; colouring.

  Directions:

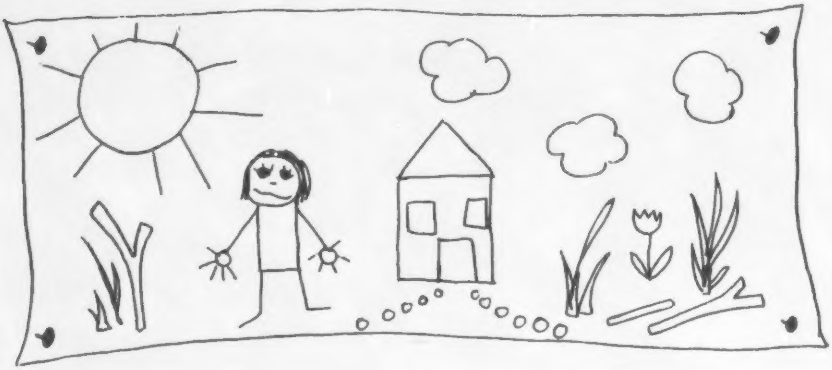
  Dissolve the cornstarch in cold water. Add this mixture to the boiling water and stir. Bring the mixture to a boil again. Add colouring. The paint will thicken somewhat as it cools.

MURALS

A mural, or very large wall picture, is a group endeavour. Everyone contributes to the whole work.

To make a mural you need a large, long piece of paper, burlap, or other wall covering to serve as a background. Pasting together several pieces of newspaper will provide a nice size. You can either lay this on the floor for the children to work on or attach it at the outset to the wall. In either case, the surrounding area should be protected by newspaper or plastic.

How to decorate the mural is up to you and the children. Children may colour or paint directly on the paper, or they may make cut-outs for pasting onto it. Combinations are also possible. For example, if the mural is to be a nature scene, the children can paste on real grass, cotton wool for clouds, and twigs for trees; then draw or paint the rest.



A mural can reflect a topic of study, a recent excursion, a favourite children's story, or something original from the children's imaginations. You provide the materials and guidance for work, but allow the children to express their own ideas freely.

THREE-DIMENSIONAL MEDIA

MODELLING

The medium for modelling can be clay, dough, papier maché, or plasticene. Each material has its advantages. Clay is often most preferred, since it is a natural material.

Clay

Most children who work with clay are interested in the activity itself, not in preserving the objects they make. If the clay is stored carefully, it can be used and re-used for a long period of time. This makes it a relatively inexpensive classroom material.

Clay can be a messy activity, so it is best to cover the work area with newspapers, plastic, smooth wooden boards, or stone slabs. Although clay washes out of clothing easily, it is nevertheless advisable for the children to wear an apron or smock.

Give each child a large amount of clay to work with in order for him to gain maximum benefit from this work. Initially, children will busy themselves in getting to know the material – how it feels and what it can do. They will pinch and poke at it, roll it and pound. When they are familiar enough with clay, they will start to make numerous creations, most of which they will promptly destroy by rolling them back into balls or pounding them flat. It is the older child who is concerned with preserving the model he makes.

When it is time to clean up, demonstrate for the children how to roll their individual bulks of clay into large, round balls for storage. To keep the clay moist for easier handling the next time, poke a hole with the thumb in the top of the ball and pour in a little water. Clay should be stored in a plastic bag or an airtight container, such as an earthenware jar. Add a small amount of water into the jar or place a damp cloth over the clay before closing the container.

If dried clay remains on a table, use the side of a flat stick to scrape away the excess.

Clay can, of course, be bought. If you purchase the clay in powdered form, you will need to add water and to stir and knead until the clay reaches a pliable consistency. If you live near a creek bed or some other place where natural clay exists, you (or your class) can dig it.

After removing the clay, dry it, then break it up to pick out the large impurities. Mix the remaining clay with water and strain through a cloth or wire sieve. This will rid the clay of other impurities. Let the clay stand until clear water rises to the top. Pour off the water and allow the remaining contents to dry until it is easy enough to use for modelling.

Dough

Dough is an alternative to clay. Accessories such as twigs, toothpicks, used matchsticks , cookie cutters, and rolling pins will stimulate a wealth of ideas.

Here are a few of the many ways to make modelling dough:

MODELLING DOUGH

- Ingredients:

  3 cups flour; 1 cup salt; 1 cup water; ½ cup vegetable oil or a few drops of liquid detergent; colouring (optional)

  Directions:

  Mix the flour and salt. Gradually add the water and oil. Add colouring if desired. Knead well.

  The dough, placed in a closed container or plastic bag, can be stored in a refrigerator or in a cool place. It can also be baked, if desired, at a medium temperature for 2 hours. It is not to be eaten, however. This baked dough is only for decoration and can be coloured or decorated.

- Ingredients:

  1 cup table salt; 1 cup cornflour; ½ cup water

  Directions:

  Mix the ingredients thoroughly and cook over a low heat, stirring constantly until the mixture stiffens into a lump. It may be used as soon as it is cool enough to handle.

- Ingredients:

  4 cups salt; 1 cup cornflour; water

  Directions:

  Mix salt and cornflour with enough water to form a paste. Cook over a medium heat, stirring constantly. This is

Apply at least seven layers of newspapers to make the construction strong. To remember where one layer ends and the next layer begins, make one layer from the words of the newspaper and the alternating layer from its pictures. Set in a safe piece to dry for several days.

To remove the papier mache structure from the mould, cut the dried papier maché in half with a sharp knife. You should be able to lift out the mould with no difficulty. Now seal the two halves of the structure together with more papier maché. When the model is dry, it can be painted and shellacked.

Plasticene

Plasticene is a mouldable, clay-like material, which can only be bought. It it sits too long without use, it will become stiff; to soften, mix it with some vaseline.

WOODWORKING AND CONSTRUCTION

Woodworking is an activity for girls as well as boys. It gives all children pleasant opportunities for developing their motor skills and involves most of the senses. A child feels the texture of the wood. He smells its aroma and sees the sawdust fly as he saws. He hears the pounding of the hammer as it hits the nail. For the young child, woodworking is a happy experience in action and sound.

The question does arise: Should little children be allowed to work with carpentry tools? Woodworking with youngsters can be perfectly safe - if, first, you teach the children how to use the tools carefully and wisely. Show them how to hold and hammer in a nail straight, and how to pull the nail out if it bends. Teach them to saw on a line by first making a groove, then pushing the saw strongly but pulling it back gently. Guide them to saw in long, even strokes.

Limit the number of children who use the workbench at any one time. This will make it easier for you to supervise and will also promote conditions of safety. Each child should have enough space to work without his tools coming into contact with another child.

If a child should accidentally hit his thumb with a hammer, talk with him about why it happened so he can avoid its happening again. Sometimes this is a matter of learning a skill and developing coordination. But sometimes it is due to the child's talking to a friend instead of watching what he was doing.

Children want to talk, and share their accomplishments, as they work. This may be allowed in woodworking as long as they take care at the same time. They might even like to sing - especially songs based on the rhythms of their movements at work.

Give the children opportunity, good tools, proper guidance, and supervision. You will be pleasantly rewarded when you see how seriously and responsibly they work. Do not expect to see products that a carpenter would make. A child has his own reasons for constructing what he does.

Allow and encourage the children to work on what is important for them. Two narrow strips of wood nailed together at a perpendicular angle may serve as an aeroplane for dramatic play. A box-type creation may be a home for a pet. Some children are content to hammer rows of nails into a board.

You will find the equipment listed below to be necessary for woodworking activity. You will need to buy or make some of it; the rest you may be able to find.

Workbench: A place to work is important. A child's woodworking area should be a little shorter than one half his height. A workbench can be made from a heavy, old table with the legs cut off to the proper height, a sturdy bench or stool, or a firm crate.

Tools: For children four or five years old and older, use real tools - adult-size but as light-weight as possible. The following is a suggested list:

claw-head hammers - about 200-375 grams (7-13 ounces);

saws - 40-50 cm. long (may need sharpening about every 2 years);

vises or C-clamps;

sandpaper - coarse sandpaper works best for young children;

nails - assorted common (head) nails about 3-4 cm. long and long nails for hammering two pieces of wood together;

white glue - for wood scraps that do not lend themselves to hammering.

Older children (six years and older, generally) can be taught to use hand drills, coping saws, screw drivers, screws, and pliers. Very young children (around three years old) are happy hammering tacks or small nails into chunks of styrofoam or layered corrugated cardboard or wallboard.

Storage: Teach children respect for tools. Every tool must have its own storage place and be returned there after use. It is handy to hang tools on a peg board. Outline the shapes of the tools on the board with crayon or an ink marker. A child will then know where to hang each tool when he is finished with it. Nails can be kept in a tin or plastic container with a lid. If possible, keep a magnet nearby to help with spilled nails.

Wood: Many carpenters or lumber yards will give you wood scraps or off-cuts free if you explain that they are for young children. Choose soft wood; it will be less frustrating for little children to hammer in nails. Smooth pieces without jagged edges are best. Other sources of wood can also be used. A solid log or tree stump which sits firmly on the ground is good for hammering into. Discarded crates and window shutters, fallen tree branches, wooden poles, dowels, broom sticks, and spools – all can be used for woodworking.

Often children combine a variety of items and techniques to form "junk constructions," many of which are rather delightful. Save jar lids for making "wheels."

Mobiles

Mobiles can pleasantly decorate the classroom or the child's own room at home. To make a mobile, the child merely cuts shapes from coloured paper (he can also use shells, feathers, or other finds) and ties them to a wire framework or stick. The objects should be arranged so that they balance one another. It will fascinate the children to watch the mobile move as the wind blows it.

OBJECTS TO COLLECT AND SAVE FOR ART WORK

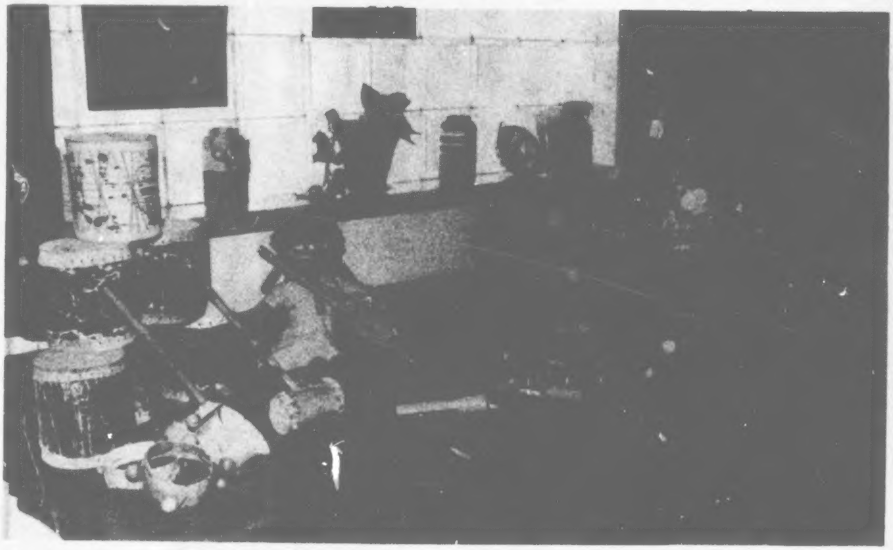
Be sure to keep an eye on your art materials and supplies. A periodic check will enable you to have materials on hand whenever you need them. In addition, you might constantly be on the lookout for objects that will help stimulate the art activity. You can probably add to the list below.

acorns, nuts, coconuts
aluminium-foil pie tins
balls
bamboo
beads
belts
bleach bottles
bones (can be bleached)
bottle caps
bowls
boxes (all sizes)
bracelets

branches
burlap (also known as
 crocus bag or yutta)
buttons
candle stubs
candy wrappers
cans
canvas
cardboard tubes
cartons (eggs, etc.)
cellophane
celluloid
clock springs or insides
cloth
clothespins
coconut husks
confetti
containers for pills, etc.
cord
cork
corn (maize) husks
corrugated cardboard
cotton
crystals
curtains
detergent bottles
dowel rods
elastic
excelsior
fabric scraps
factory discards
feathers
felt
fish line
flannel
fruit pits
gourds (calabash)
hat boxes
hooks
horseshoes
inner tubes
jars and lids
junk hardware (screws, nuts,
 bolts, etc.)
kegs
knobs
lamp shades
leather remnants
leaves
linoleum
magazines
men's old shirts
metal foil
muslin
newspapers
nylon
oilcloth
old holiday cards
old kitchen utensils
old smocks
pans
paper bags
paper doilies
paper plates
paper produce trays
paper tubes
parchment
paw paw stems
pebbles
pencils
picture frames
pillows
pine cones
pins
pipe cleaners
plastic
plastic table cloths
raffia
rawhide
ribbons
rings
rocks
rope
rubber bands
rubber tubing
rubber tyres
rulers
safety pins
sandpaper
seashells
seeds
shaker cans
sheepskin, chamois
shoe bags
sisal
sponges

spools
sticks
stockings
straws
string
styrofoam
tacks
tin cans
tissue paper
telephone wire
wallpaper
wax paper
window shades
wire
wire mesh
wood cylinders
wooden beads
wooden molding strips
wood pegs
wood scraps
wood screening
wrapping paper
yarn

"Turn yourself about!"



Homemade musical instruments.

A music session.

Music & Movement

Children have a natural bent for music. They sing to themselves as they work and when they play. They use chants and rhymes for jumping rope, bouncing balls, and circle games. They are keen listeners to even the softest sounds - the wind blowing through the treetops, rushing water - and to the cricket's chirp. Musical experiences should be pleasant ones in your kindergarten. The children will help to make it so.

And what about the teacher? Some teachers are uncomfortable while teaching music because they think they do not sing well or because they do not play any instrument. While such talents are obviously helpful, these are not the most important factors in determining the success of musical experiences in your classroom. Most children will not even notice how you sing. What they will nòtice, and what is important, is your enthusiasm.

Plan some formal group time for music every day. If you do not have enough space in your classroom, try conducting the activity out of doors, when the weather permits. Give the children a wide variety of musical experiences. It is important for them to learn and to share the music and dance of their people and culture. It is equally important to broaden their knowledge by teaching them new rhymes, songs, dances, and musical games.

Give the children a chance to move to music in their own way. Some, however, are shy or afraid to participate in group music activities. Never force a child to participate. Invite him to join you, but if he refuses, do not press him. When he feels secure and ready, he will allow himself to become involved. He may, in fact, be very much involved with the music already - as a listener.

There may be children in your classroom that have parents or other relatives who play musical instruments. Invite these people to visit your classroom to play for the children and to explain how the instrument works, how it is tuned, where the sound comes out, the difficulty or simplicity of playing it. Make it clear to these guests that children enjoy simple and familiar tunes rather than complicated displays of musical ability.

If you have a record player, choose only records that have value for the children. Children should hear music of a marked rhythmic quality - music that stimulates them to move to the beat by dancing, jumping, clapping, marching, galloping, etc. You can help to provide rhythm by beating a drum or clapping two sticks together, two blocks, or two stones. Recorded music may also form the background to other activities. Lively tunes are pleasant for clean-up time, and flowing, gentle melodies for rest time.

SINGING AND TEACHING A SONG

Some important points to know about music are these:

Melody — The melody of a song is its tune.

Pitch — Are the sounds high or low? A child can first make high, squeaky sounds, then low, deep sounds to hear and sense the difference.

Tempo — Tempo is the speed of music. Is it fast or slow?

Dynamics — Is it loud or soft? Can you begin with a soft or weak sound and make it grow gradually louder and stronger? Can you do the opposite?

Mood — How does the music make you feel? Happy? Sad? Peaceful?

Rhythm — Rhythm is the pattern of the music, the repetition of the beats. Some beats are strong and some weak. In what pattern do they fit together to form the rhythm?

Musical Phrasing — Can you feel a musical "sentence"?

Harmony — Harmony is the pleasing combination of all the sounds together.

Songs should be sung every day. They should be sung by you and the children for the mere pleasure of enjoyment. For instance, if you know a song about washing hands, sing it as the child is washing his hands. If a colourful bird flies overhead and you know a song about a bird, sing it then and there. Spontaneity is a delightful quality in music.

Songs may also be coordinated with your curriculum. There are counting songs for learning numbers. There are songs about animals, places, travels, and many different events. Use them when they can be fitted comfortably into the studies.

Encourage children in their musical efforts. Never tell a child that he is not a good singer or that he does not know how to sing. He can learn.

Young children are not usually accustomed to singing in a group, until they come to school. They may sound out-of-tune and not the way you think they should sound. At this stage, being off-key is not important. What is important is that the children enjoy experiences in music and they gain an appreciation for it.

When you sing with the children, begin with a song they already know. When teaching a new song, choose a simple one for very young children and a more complicated one for older children. Songs with repetition of actions, sounds, and words are always well received. Of course, you should know the song well yourself so that you can give all your attention to the children. They should be seated to be able to see you conducting them.

Sing the new song casually during the free-play time to let the children become familiar with it before you teach it to them during the formal music activity. The song may need a short introduction. For example: "Do you remember the day we found a cat sleeping in our classroom? This is a song about a cat. What sound does a cat make? If you listen carefully, you will hear that in this song it says 'Meow.'" Children will learn a song more quickly if it is connected to a topic or activity they have experienced or are learning about.

Sing the entire song alone, at least once, so that the children can hear and "feel" it. Explain that they should "first listen." After singing it through, invite them to join you in singing. You might want to "draw" the song in the air with your hand to show when the melody is high or low.

If the song indicates hand or body motions, the children will enjoy doing them as they learn the words. If the words of the song are in the children's mother tongue, explain each word that may be new to them. If the words are in a foreign language, explain the general meaning of the song.

It is best not to continue repeating the song over and over again. After the third time or so, go on to another song and return to the first one another day. It will be more pleasant that way. Ask for requests. The children have their own favourites and will feel more involved and motivated if they are allowed to choose.

Write down the words to new songs and place them on a special bulletin board for parents, who may then be persuaded to copy the songs and learn them, too, to share with their children at home. Try to learn songs from as many sources as possible. Whenever you learn a new one, write it down in a notebook. Gradually you will build up a collection which will be handy whenever you need it.

RHYTHMICS AND MOVEMENT

A child's natural response to music is movement, and movement requires space. (In many classrooms, already overcrowded, this may present a problem. The more space you can obtain, by moving furniture to the side, the larger the number of children who can participate at the same time.) A good way to begin is with warm-up exercises in rhythm - clapping out the different rhythms of the children's names, for example, or tapping feet and swaying to the rhythm of a familiar song. You can help the children to keep a beat by clapping, beating a drum, and so on. Talk with the children about the rhythms.

The children can take turns devising and clapping out their own rhythms. Clapping does not have to involve only the hands - children can clap with their hands on their knees, on their shoulders, their heads, and with their feet. (With your guidance, this is a good way for children to learn the names and become aware of the various parts of the body.) Rhythm can be made by snapping the fingers or clicking the tongue. If you give them a chance, the children will surprise you with many original rhythm-making styles of their own.

Introduce an echo game with movement or sound. You produce a rhythm and the children repeat or "echo" exactly what you did. Let the children take turns being the "leader" in such games. The same sort of echo game can be expanded to combine rhythm with movement by hopping, nodding the head, turning in circles - whatever actions you and the children can think of.

Beginning rhythms usually include walking to a particular beat, marching, tiptoeing, running, galloping, creeping, crawling, jumping, and swaying. Colour and excitement can be added to these activities by using various props. For example, if the children are marching, "marching hats" can be made from newspapers and feathers to form a gay parade. For slow music, balloons or scarves may be floated, bounced, or fluttered. Hoops can be used in a variety of ways - for hopping or skipping in and out and around them or rolling from one to the next when on the ground; or walking or skipping through them when they are stood up vertically. (Good hoops can be made by soaking bamboo stalks until they are pliable, then shaping them into circles and binding them to retain the circular shape.) Balls will also stimulate ideas and action.

Remind the children to listen carefully to the music so as to know how to move - quickly, slowly, etc. Adjust the rhythm to suit their abilities. You can learn a lot about a child by observing the way he moves. When a child is more physically mature, he will be able to skip and to enjoy hopping, walking backwards, stamping, sliding, and twirling. It is advisable for all children to move in the same direction, particularly if there are space limitations.

Sometimes movement is teacher-directed; for instance, you may say: "When you hear the music, begin to gallop." Opportunities should also be given for free expression in movement: "How does the music make you feel? Show this by moving to the music in any way you wish." Removing their shoes will help children to feel more free.

Another favourite movement activity is pretending - pretending to be a flower growing from a seed, pretending to splash in puddles, to carry a water jar, to row a boat, or to rock a baby. These are but a few examples. It is also fun for children to pretend to be puppets or marionettes. Attaching ribbons or strings to their arms will enhance the fun.

Children also enjoy imitating animals. If every child in your class suddenly "became a monkey," you would be amazed at the variety of monkeys that would appear. Frequently portrayed animals are dogs, cats, frogs, elephants, lions, mice, rabbits, turtles, and birds. If you feel that the children need some guidance, you might ask, "How does a lion move? What kind of sound does it make?" Other ideas for movement may come from paintings, sculptures, or photographs.

With a movement activity, you will need some kind of signal, such as clapping hands or ringing a bell, to indicate when it is time for the children to go into another movement or for them to stop altogether. Stopping times have an importance of their own. After a child's body is excited by activity, it is good for it to relax and to "melt" into quiet. Have the children lie on the floor and tell them to try *not* to move for a minute. Have them pretend to be rag dolls, and to rest. Learning to relax is important.

MUSICAL INSTRUMENTS

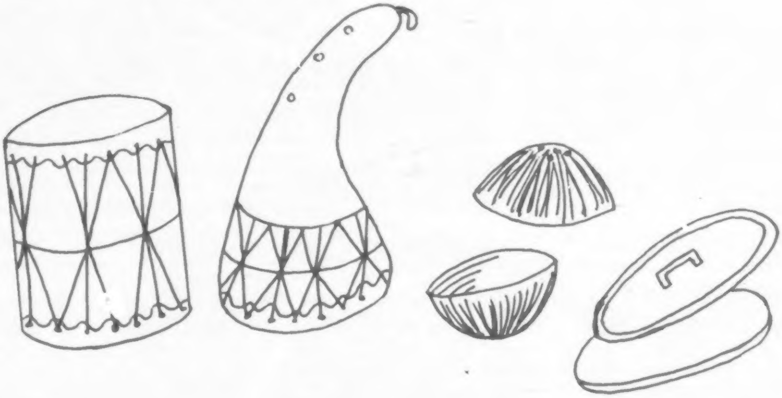
Musical instruments in the kindergarten afford the children the wonderful experience of the cooperative group effort called an "orchestra." In actual fact, many kindergartens have very few instruments and what is available may not form the kind of orchestra you envision. Nevertheless, it is an orchestra or, as some call it, a rhythm band, since the instruments are generally percussive. It is helpful to have enough instruments for at least half the children in your class to use.

A variety of instruments can be made by either you or the children. Here are some popular and easy-to-make instruments:

Shakers (also knows as rattles or maracas) These can be made by filling match boxes, tins, or other containers with rice, pebbles, beans, sand, corn, bottlecaps, buttons. Each filling makes a different sound and has a different tonal quality. Shakers can also be made by drying calabashes (gourds) until the seeds rattle inside.

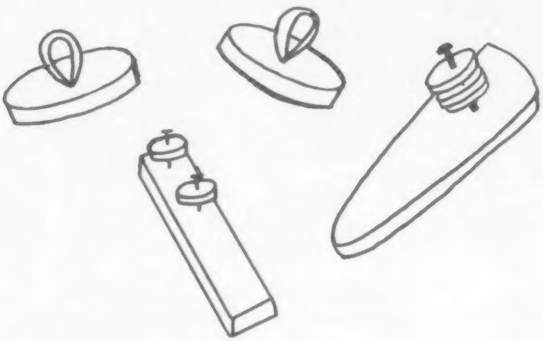
Rhythm Sticks Spoons, blocks, or stones, as well as dowel rods or broom sticks (cut to a length of about 35 cm.) may be used. Wood has a most resonant sound when two pieces are hit together. (If you are looking for more instruments to fill out the "orchestra," use rhythm sticks - their tonal quality will not drown out the other instruments.)

Drums Remove both ends of an empty can or nail keg and cover the openings with animal skin (goatskin is best) or with the rubber from the inner tube of an old tyre. Tie the two end coverings together with sisal or strong string. A gourd or calabash can similarly be made into a drum.



Cymbals These can be made from empty coconut shells or the lids of pots and pans.

Finger cymbals Punch a hole in the centre of each of two jar lids of equal size and fit a loop of elastic through the holes. Fasten.



Jingle clogs Hammer pairs of bottle caps to a piece of wood. Do not hammer the nail too far in. Leave room for the bottle caps to move and slide along the nail. If you shake the wood, the bottle caps will clack against each other, creating a jingling sound.

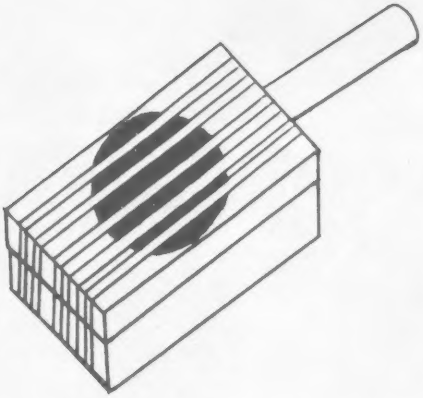
Triangles, gongs, bells Hang various lengths of metal pipes, nails, horeshoes, or other metal objects from a stick or bamboo rod. Tap them with a metal rod for a clanging sound.

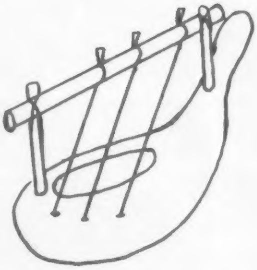
Sand blocks Attach sand paper to two blocks of wood. To play the "instrument," rub the sanded sides together in the desired rhythm.

Tone blocks Each block is made of a large piece of wood with a slot down the middle and a handle or string attached. Hit with a wooden mallet.

The instruments listed above are known as rhythm instruments. Here are some other types;

"Guitars," banjos, lyres, other stringed instruments These can be made in varying degrees of complexity, depending on the time and money you have to invest, as well as on your imagination. One of the easiest is to cut a hole in one side of a small box and wrap rubber bands around it. A more sophisticated stringed instrument can be made from a hollowed-out gourd and fishing line.





Glass bottle chorus On a wooden table place glasses or bottles that contain different amounts of water. Arrange them in order, from nearly empty to nearly full. Simple songs can be played on this instrument either by blowing lightly across the mouth of the bottles or by tapping the glasses with a stick or spoon.

Paper Many sounds can be made with paper. For instance, a crackling fire sound comes from crumpling it.

You may not have to make each instrument yourself. Perhaps instruments that are traditional to your culture or society are readily available. If you have the budget, you may want to purchase some small bells. They can be tied onto ribbons or strings and worn by the children on different parts of the body (ankles, wrists, the waist) as they dance.

Teaching Musical Instruments

When introducing musical instruments, present them one at a time. Talk about each instrument: what it is called, what sound it makes, how it is played. The children will need time to explore and become familiar with the rhythm instruments. You may want to leave them out for this purpose during a free activity period. It should be clear to the children how and where the instruments are to be used. They should not wander about the room with them. They should also be taught to take good care of them, whether they are store-bought or homemade. If you see that an instrument is damaged, remove it from the set until it is repaired. Parents may be able to help fix them or even to make new ones. Enlist their support.

It is nearly impossible for a young child to hold a musical instrument without playing it. Do not expect the impossible.

When the instruments are brought out, it is very difficult, particularly in a large class, for the children to wait quietly until everyone has chosen the instrument he wants to play.

Here are suggestions to avoid the unnecessary commotion that might occur. One is that the child should not hold the instrument while waiting, but place it on the floor in front of him. Only at a signal from the teacher will each child pick up his instrument: e.g., "Will all the players of rhythm sticks please pick up their instruments and show us how they sound?" "Now only the jingle clogs." Begin with instruments that have the softest sounds, then gradually add the others. If you begin with the drums, for example, few other instruments may be heard.

Another way of distributing the instruments is to begin by singing a song. Choose a song with a regular rhythm so that the children can easily clap the rhythm. As each child selects an instrument, he should try to play it to that rhythm instead of clapping. In this way there is no waiting and everyone is involved.

Few kindergartens have enough instruments for all the children to play at once. They will need to share by taking turns. Still, everyone can be involved, using hands and feet as instruments to clap or tap out rhythms. Another solution is to assign roles. Those with instruments form the orchestra; the rest become the choir. Since the choir is important, too, it stands up. Both choir and orchestra wait for the conductor, who might be one of the children. Orchestra members should leave their instruments on the floor until the conductor gives the signal.

The children themselves can decide which instruments have the most appropriate sounds for a particular song. For example, if the group is singing about a horse, they may select coconut shells to beat rhythmically on a table top in imitation of the "clip-clop" sound of a horse's hooves. Such decisions will also provide the rationale as to why some instruments are played at one time and others at another.

Musical instruments can be enjoyed in many ways. Use them in combination with movement and art to give the children a broader, richer experience.

Story-telling in book corner.

Making a picture book.

A game matching letters.

Language

It is a time of great joy for a parent when his child learns to walk and to talk. These are, indeed, great accomplishments. Strange, then, that many parents spend the first two years of their children's lives encouraging them to walk and to talk, and the next ten years telling them to sit down and be quiet!

Unless a child has continuing practice in these areas, his progress will stop. Just as a child must have experience in walking before he can skip or run, he must also have experience in talking before he can engage in higher and more complicated forms of language, such as reading and writing. Children need as many experiences with language as possible. It is your job as their teacher to provide these experiences.

Where does one begin? Even before a child is ready to read and write, the language around him is providing a framework for his thoughts. It gives him labels or names for ideas and helps him to remember them. It helps him to explore new realms through imagination and reasoning, and allows him to express feelings and emotions.

Language involves listening, speaking, reading, and writing. In order to speak a language well, a person must first listen and hear how words sound. For reading to make sense, he must be familiar with the concept of the words he is reading. To write freely and not merely copy, a person must be able to use words in his own way. Each step is based and depends to a great extent upon the preceding step.

DIFFERENCES IN LANGUAGE ABILITIES

You must get to know the language level of the children who enter your classroom. Talk with them - not just to them or at them, but with them. Conversation is a two-way process. It involves speaking, but it also involves listening. You must give the children many opportunities for speaking. Listen to them; show an interest in what they have to say. Of course, the children must also learn to listen. You can help to promote listening skills through various activities or games. For example, have children try to identify the sounds of various musical instruments or to recognise (without looking) a classmate's voice (see section on games).

As you get to know the children better, you will note great differences in their language abilities. *Age* may be one factor influencing the content of a child's language, the concepts he understands, and how well he expresses them. The very young child (e.g., age 3) is still experimenting with language, changing it to suit his needs. As he matures, he starts to enjoy the sounds of words. He may continually repeat favourite words or sounds, singing jingles, phrases, or even people's names. By the time a child reaches the age of 6 or 7, he is still expanding his vocabulary but is no longer making up his own words. Language develops and progresses on a continuum, and no two children are alike in the rates of their growth and development. This holds true even for children in the same family - all the more so for the numerous children in your class. It is natural that differences should exist.

Common Mispronunciations: Their Correction

In the early years, certain sounds are difficult for some children to pronounce. A very common mispronunciation is displayed by the frontal lisp, in which the child substitutes a [th] or similar sounds for [s], [z], [j], or [ch]: e.g., "thun" instead of "sun." Other frequently substituted sounds are these:

[w] or [y] for [l] - "*w*ettuce" or "*y*ettuce" for "*l*ettuce"
[w] for [r] - "*w*abbit" for "*r*abbit"
[f] for [th] - "*f*umb" for "*th*umb"

These examples are based on the English language, but similar mispronunciations exist in every language system, since learning to speak is a process of maturation and experience, and not merely language structure.

Do not make a big issue of mispronunciations. It is usually a matter of maturity, and they disappear as the child gets older and develops physically. As adults, we sometimes forget that speech is a very complicated process. Even the tongue has muscles, and it takes time to learn to use them.

Never embarrass a child by asking him to repeat sounds or words after you, and by all means do not laugh at him. What you can do is to say the words correctly after the child has mispronounced them. Then continue with another short sentence so that your words will appear less obvious as a correction.

You can also use the child's words in a slightly different sentence from his. For example, if a child says, "Da wabbit wan into da cwoset," you may respond, "The rabbit ran into the closet. Let's see if we can get him to come out." A child may exclaim: "It's waining! It's waining! Maybe when da cwouds move, dew'll be a wainbow!" The response to this may be: "It certainly is raining. If the sun comes out from behind the clouds, there should be a rainbow."

By correctly repeating a child's incorrect words, you give him a chance to hear how the words should sound without calling attention to his mistakes. You should also treat grammatical errors in the same way.

Set a good example for the children by speaking clearly and correctly. Maintain a pleasant vocal quality and use a variety of words. If you have classroom helpers or aides, remind them of the importance of talking, explaining, and discussing with children.

It is usually easier to converse with children who are naturally talkative. Be careful, however, not to neglect the quiet, shy child. He may be exactly the one who needs your attention.

Quite often, as children learn to speak, they arrive at a certain plateau. The level then seems to descend somewhat. This generally occurs about the age of three. A child who previously spoke rather fluently may suddenly seem to stutter. A parent may fear that his child's language ability is breaking down. But this is not so. The child is merely stabilising his newly acquired abilities. After a brief period of adjustment, the smoothness and fluency of language will return. By calling undue attention to a child's temporary lack of fluency, a teacher or parent may actually bring about a true stuttering problem. This is precisely the time, therefore, that one must *not* make an issue of the child's lack of fluency.

Another factor that can influence a child's language abilities is his home background. In some homes, adults spend very little time, if any, talking with children. They may direct or scold them. They may even compliment them. But they do not listen to their children. They do not discuss things with them. They only talk at them. Children from such homes learn very quickly to remain silent.

Other children may come from homes in which language is encouraged. They are rewarded with praise for asking pertinent questions. Their parents take them on walks in the neighbourhood and discuss with the children what they see. These children are read to and are told many stories. A child who comes from a home in which newspapers and books are read will want to read himself. If adults tell or read stories to him, he will more quickly build up his own storehouse of words and expressions.

LANGUAGE IN THE CLASSROOM

Regardless of the language backgrounds and abilities of the children in your class, there are many things that you can do to guide them to still higher levels of language accomplishment. Keep in mind that young children learn through their senses and through active involvement: there is a direct relationship between first-hand experience and the understanding of abstract ideas.

Some people feel that when a child begins school, even if he is only three or four years old, he should start learning to read immediately. In order for reading to make sense, however, a child must be familiar with the concepts of the words he is reading. Only then can the stories, poems, or other language activities be meaningful to children. The sounds of words or the written configuration of letters are not, after all, the things themselves, but only symbolic representations. For example, if you say or write the words of different fruits, they remain only sounds or letters to a child. Unless he has had experience in seeing, tasting, smelling, and feeling those fruits, he has no concept of what these words mean.

After a child has gained experience and familiarity with objects and ideas, he is ready to identify pictures, which are representations of real objects. If a child can successfully identify picture symbols, he is ready to tackle letter symbols and, later, their composition into words and sentences. Thus, the road to reading is paved with many experiences. Abstract symbols do not enter the scene until the child is more mature and able to grasp abstract ideas.

What kinds of language experiences should you provide in the kindergarten?

It is important for the children to know and to use the names of persons and things. If a child says, "He won't give me the toy," you should respond: "*Who* won't?" and "*What* toy? It has a name." By allowing the children to talk about their experiences, to ask questions, and to have those questions answered, you will aid the expansion of the children's existing knowledge and vocabulary.

Attendance at a kindergarten is itself a new experience for most children. There are many new people to meet, certain rules of behaviour to learn. Perhaps there are materials and equipment that the children have never seen before. Acquaint the children with all of these at the outset.

Then it will be time to expand horizons. Go outside the classroom. Go on visits in the neighbourhood and get to know the community. Teach the children about the animals in your community. Some children may have pets or farm animals at their homes. Arrange for the class to see these animals. And discuss them: What do they eat? Where do they live? Are there special names for the homes of different kinds of animals? What nicknames would the children give to these animals?

Teach the children about the fruits and vegetables that grow (or can be bought) in their environment. Do all fruits look alike? Have the children classify them according to colour and size; suggest other criteria for classification. Where does fruit come from? Do all fruits grow on trees? Do all vegetables grow in the ground? How do people eat them? What taste do they have? (The children can compare tastes by actually tasting.) What kinds of skins or outer coverings do different fruits and vegetables have? What kinds of seeds? Can the seeds be eaten? By birds? Can these seeds be planted?

Clothing is another topic. Teach the names of summer clothing and of winter clothing. How does the weather influence what one wears? Teach about weather, seasons, clouds, insects.

There is much to teach - much to be learned. Whatever you choose to teach, be certain that you do it by providing the children with a multitude of first-hand experiences related to the subject. A child is not ready to read or write the names of things until *after* he has had all these experiences, until he can recognise pictures of the objects and can make drawings of them himself. In such a way the child learns from the concrete to the symbolic or abstract.

EXPERIENCE CHARTS

You can make a commonly shared experience more rewarding still with an "experience chart." An experience chart is a story the children compose together, based on a common group experience. It can serve as a kind of review of that experience.

The teacher makes such a chart by writing down the words as the children dictate them. It is best to write large, clear letters with an ink marker or dark crayon on a large sheet of paper or cardboard. Attach the paper or cardboard to a chalkboard, bulletin board, wall, or some other place where everyone in the class can see. In this way the children can observe you actually writing their words as their story gradually takes shape. You can save the story for the children to review as often as they like or need (which is the advantage of ink or crayon over the use of chalk for this activity).

As the children see you transcribing their words and thoughts, they will come to realise that letters represent sounds, that certain sound combinations make words, and that words have meaning.

Often a child will "test" adult visitors by pointing to the experience chart and asking, "What does it say?" As the adult reads the story aloud, repeating the words the child has heard before, the child will probably respond with delight, saying something like: "That's exactly what my teacher told us it says!" If you do write what the children say, then anyone who knows how to read can share, through words, that which the children experienced in real life and described to you.

You will probably need to guide the children when making their first few experience charts by setting up a certain format or framework for the story. This is necessary in order for the story to flow in logical sequence. Different aspects of the same experience may bear different weights of importance for the child. Everyone will have gained something from the experience in his own way, and many will want to share reactions. Since this is a group endeavour, you will need to coordinate the various responses to form a composite and workable story. A good way to guide the children in what they have to share is by asking questions. The order of the questions, and their answers, should lead the story from an explanatory beginning to a logical end.

Examples of guide questions:

Where did we go yesterday?
How did we get there?
Did anyone else go with us?
What did we do there?
Did you notice anything special that interested you in particular?
(to a particular child) What do you remember about your trip (e.g.) to the bakery?

Can anyone think of anything else to add that
we have forgotten to mention?
How did you feel there?

Here is an experience chart that city kindergarteners made after visiting a municipal aquarium:

We went to visit an aquarium.
We went there by bus.
David's mother and Maya's mother went with us.
Sarah's mother came, too.

There were many fish in the aquarium.
We walked around and looked at all the fish.
They were pretty colours.

The fish swam around in little aquariums.
They know how to swim very well.
Aviva saw a big turtle. Larry saw one, too.
There was a big skeleton of a whale hanging from
the ceiling. It was scary. Yuval liked it.

Outside there were seals in a big, big tank of water.
Michael's hat fell into the water and the seals
played with it. They balanced it on their noses.
A man from the aquarium fished the hat out of the
water with a big net on a long pole.
Then we came back to school.

JINGLES, RHYMES, FINGER PLAYS

Jingles and *rhymes* are often handed down, for generations, from teacher to pupil, father to son, mother to daughter. Some are chanted when jumping rope or bouncing a ball. Often they make little or no sense, yet each has a definite regular rhythm. Can you hear the ball bouncing in the following example?

Old Dan Tucker was a fine old man
He washed his face in the frying pan
He combed his hair with a wagon wheel
And died with a toothache in his heel.

- Dan Emmett

If certain jingles and rhymes are a part of your culture, do not deprive your class of learning them just because they no longer seem "modern" or appropriate. Their appropriateness stems from the fact that they add to the individuality and charm of a culture. Learning such folk rhymes adds to a child's sense of identity with and belonging to his group.

Finger plays: short verses that, when spoken, are accompanied by movements of the fingers and hands. This adds an element of action and participation. Finger plays may be used as a kind of attention-getting device during transition periods in the classroom, or simply for the gaiety they afford. Encourage the children to join in, with both words and actions. Many finger plays deal with counting. Others refer to animals, and to good manners. Some are merely short, simple stories.

Following are two examples that could be translated into any language:

Five Little Mice (begin with both hands behind your back)

Five little mice went out to play *(bring out one hand and wiggle all five fingers)*
Gathering crumbs along their way.
Out came pussycat *(Bring out the other hand, "creeping" as a cat)*
Sleek and fat,
Grabbed a little mouse and went scampering back. *(with your "cat" hand, grab one finger of the other hand; bend that finger back to hide it, and quickly place both hands behind your back again)*

The verse begins again; this time, only "four little mice went out to play." *(bring out one hand and wiggle four fingers, hiding the fifth by bending it)* Continue with the finger play until no little mice are left.

Little Hands

Open, shut them; open, shut them; *(open both hands wide, then close them into fists)*
Give a little clap: *(clap hands together)*
Open, shut them; open, shut them; *(repeat hand opening and closing into fist)*
Put them in your lap. *(place both hands quietly on your lap)*

POEMS

Poetry is a literary form that should not be considered too "grown up" for little children. Children like poems, which definitely have a place in the kindergarten classroom - but only poetry that is suitable for young children.

A poem must be suitable both intellectually and emotionally, and must be appropriate for the children's level of maturity. For example, little children have difficulty in sitting still for long periods of time; they like action and movement. So the poetry for young children must contain fairly rapid changes of images - not lines and lines of description, but action.

A child must be able to "see" the action in the poem. Each stanza you read aloud should paint a picture with words that a child can "see" in his mind. If the poem has a musical quality so that the children can sing or clap to it, that is all to the good. Frequent rhyming is also desirable in poems for children. Since the rhyming words stand out the most, they should bear the most meaning.

The poems should be brief, with simple ideas, phrasing, and diction. They should deal with experiences, objects, animals, or people that the children know and enjoy. Humerous poetry is also welcome. Most important of all, children's poetry should be good poetry. It should meet the same standards of excellence that one expects of poetry for adults.

Some children may want to create their own poems. By all means, encourage them. Find time to write down a child's words as he dictates his poem to you. He may want to draw pictures to accompany his words. If many children do this, you can collect their poems and form a booklet. Place it in the library corner of your room for everybody to enjoy.

Memorise several poems that you yourself like. You can actually build your own collection, which can be shared with the children spontaneously, at appropriate moments. The children will catch the spirit of the poem through your enthusiasm.

STORIES AND STORYTELLING

Stories help to provide information, stimulate imagination, and increase vocabulary. They also provide great emotional satisfaction.

Presenting a Story

There are many ways to present a story to children. The oldest and most traditional method is simply to tell the story, with no additional props. Other ways of presentation include reading to the children from a book - perhaps a picture book; telling a story with the use of a flannel board, a flip chart, or puppets; creating a story with small figures in sand that you or the children move about as the story progresses; painting a story on paper or drawing it on the chalkboard as you tell it; singing a story - a ballad. Regardless of the method you choose, be certain you know the story so well that your concentration can be on the children as you speak.

Before you begin the story, see that all the children are comfortable, that they all can see and hear, and that they are not crowded together. You may want to seat the children in a circle, a semi-circle, or some other arrangement.

The size of the group listening will have an effect on how a child receives the story. Obviously, the smaller the group, the more intimate the situation becomes. While stories presented to the entire group are certainly appropriate, there is also value in sharing a story with a very small group - even to a single child who is seated on your lap. The younger the children, the smaller the group should be.

The place in which you stand or sit to present the story can also influence the children's reactions. If the usual place for stories is in a set location indoors, vary the atmosphere by moving outdoors from time to time. On a sunny day you may want to sit as a group under a tree.

There are several techniques for reading a picture book. One is to hold the book up so that the pictures face the children throughout the story. This enables them to watch the story unfold and also to reflect upon the individual pictures. With such a method you need to look at the words from the side as you read.

If you feel that too many visual cues prevent a child from using his own imagination, then hold the book on your lap, but raise it for all the children to see each time a picture appears. Show the pictures by moving the book slowly from one side to the middle to the other side and back again so that everyone, regardless of where he sits, will have a chance to see each picture.

Use gestures and facial expressions as you read. These will help make the story come alive.

Regardless of the way in which you choose to present the story, try to maintain eye contact with the children throughout. Note the children's reactions and listen for their comments. Are they listening intently? Are they wiggling about or disturbing other children?

Choosing the Right Story

Know the children for whom the story is intended. A story should suit their age and maturity level, their interests and needs. Three year olds usually have short attention spans: stories that you tell them should be short, simple, and realistic, reflecting the everyday lives of children like themselves.

As children grow and mature, they will be able to sit for gradually longer periods of time. They still like to hear about other children and about everyday events, but their interests are expanding. They are ready to hear about other people, about places, animals, and events. They become information-seekers, fact-finders. They like to hear stories that explain how things happen - seeds blossoming into plants, tadpoles into frogs. And they appreciate humorous and unusual tales.

Sometimes a story has a sad ending or deals with tense or unhappy situations. Such stories also have a place in your kindergarten. Children do have fears and do have feelings, and stories can serve as an outlet for helping them understand and deal with such emotions. Discuss the story and be prepared to talk about possible reactions to it. (You might open the discussion with a comment, such as, "That was a sad thing that happened. Have you ever felt that way?")

The charms of fantasy and fable also add to the literary lore of children. In writing about children deprived of such tales, the Russian author Kornei Chukovsky remarked: "Such children know of nothing rare or marvellous on the face of the earth; they know only of bread and cabbage, boots and rubles. To fear that some little fairy tale will turn them into romantics, into incompetents for practical living - this fear can possess only those bureaucratic contrivers who, attending meetings from morning till night, never see a little child." (*From Two to Five*, University of California Press, Los Angeles, 1968, p. 125.)

Literary value is important in the stories you choose. Does the story have a simple, well-developed plot? Does it lead in a logical way to a convincing and assuring climax? It is best to have only one main character in stories for young children, someone with whom a child can identify. Also, the ideas of the story must be easy enough for the children to understand and within the realm of their experience. Other qualities that add to the success of stories for young children are direct conversation, interesting sounds of words, catch phrases, rhymes, and repetition. Clear attractive pictures also enhance a story.

Storytelling — an Art

A person who knows how to tell a good story is, some say, truly an artist, for storytelling is an art. When selecting a story for telling to the children, choose one that appeals to you. If you do not know any stories well enough to tell, feel free to make up your own, whether the story is about the children themselves, about yourself, or about an ordinary experience. If you know people who are good storytellers, invite them to your kindergarten. (Some of the children's grandparents may have wonderful stories, based on traditions.)

If you choose to tell a story from a book, first read the story for yourself, then put it aside to think about it. Read and reread, think and rethink the story until you feel you know it well enough to tell without the use of the book. Now put the book aside and practise telling the story aloud to yourself. Speak slowly and clearly. Use emphasis in the proper places. Your own enthusiasm should shine through the words; this will be easier when you are actually involved in telling the story to the children.

Children like to hear their favourite stories again and again. And each time you tell a story, you will get to know it just a little better. Feel free to repeat such stories - but not at one sitting.

If possible, provide a variety of stories for children at various times of the day, other than just at an established story time. Stories are appropriate at any time of the day. Sometimes a child simply likes the cosy and secure feeling of having a lap to sit on or a trusted adult to be near.

BOOKS AND OTHER VISUAL AIDS

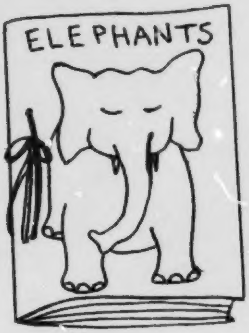
There are many different kinds of books for young children. Some deal with language - alphabet books or picture dictionaries. Others provide information - factual picture books about machines, animals, workers in the community, weather. There are still other books that exist entirely for the sake of enjoyment and recreation. Sometimes teachers make up their own stories and write them down to use as books. Sometimes even the children do this, dictating their ideas to the teacher.

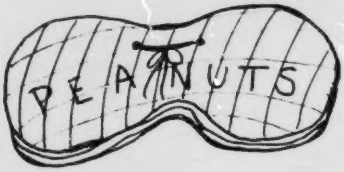
Books and booklets are easy to make by either drawing pictures or cutting them out from newspapers and magazines and pasting them onto papers. Some such booklets consist solely of pictures. Others have words, also. You can write the words with crayon or an ink marker.

The pictures you draw or choose for illustrating the story book should, of course, be attractive and clear, with interesting and appropriate details. Too much detail, however, may prove distracting from the main idea.

Draw or colour a pretty cover that explains what the book is about and attach a back-cover paper. If you have stiff paper such as bristol or poster board to use for the front and back covers, the book will last longer. Cardboard is even stronger. Combine the papers and bind them between the covers by stapling, taping, or whatever means is most convenient.

The size of the book should be in keeping with the subject matter; for example, a story about an elephant should have large pictures, a story about a little mouse small pictures.





The following are but a few suggestions of topics for homemade picture books:

Times of the day	morning, evening, dark, light, afternoon, early, late
Faces of people	happy, sad, serious, laughing, surprised, angry, content
Weather	hot, cold, windy, dry, calm, wet, foggy
Types of clothing	shirt, dress, trousers, shoes, sari, belt, sweater
Furnishings	table, chair, sofa, lamp, bench, shelf

Create a cosy library corner in your classroom. It need not be elaborate. It could consist, literally, of just a corner of the room on the floor. What is important is that a place for books and room to browse do exist. Arrange the books on a blanket or mat, or set them on a table or shelves.

If your library area is on the floor, sew some little pillows for the children to sit on as they browse. Teach the children to handle books carefully, how to turn the pages properly. Children should have clean hands when handling books. If you have enough books, the children can borrow them. However, if they take them home, they must be careful to keep these books in a safe place, away from pets or the hands of very small children.

Do not get upset if your book supply seems meagre. Quality is far more important than quantity. If you make or obtain one good book, that will be one more than you had before, even if it is the only book in your library.

As you gradually build up the book supply, aim for a variety of types of books. There should be books for group stories; others should be suited for looking at individually.

Flannel Board Stories

A flannel board is made of wood, sturdy cardboard, or some other strong material that is covered with flannel or felt. When pictures are backed by felt or sandpaper, they will stick to this board. It is a handy means of illustrating stories you tell, so long as the pictures are large enough for everyone to see, even when sitting in a group.

Whether the pictures are your own drawings or cut out from magazines, paste or glue onto the back of each one a piece of sandpaper or felt that is large enough to support the weight of the picture. If the backing is not sufficiently large and firmly attached, the pictures may fall off the flannel board continuously throughout the story, distracting the children and causing them to lose interest.

Before telling a story with the flannel board, arrange the pictures in their proper order of appearance. This will save time and will help the story to run smoothly when you tell it. Take care not to clutter the board with too many pictures at once, as this will confuse the children. When each picture has completed its function in the story, take it down to make room for other pictures.

Store the pictures for each flannel board story in a labeled envelope. A see-through envelope would enable the children to choose stories for themselves, even though they cannot yet read the labels. If this is not available, put on the envelope a picture that will explain to the children what the story is about.

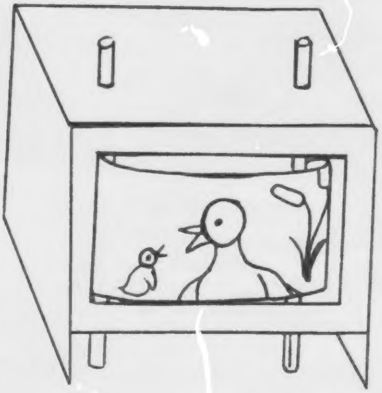
Flip Chart

A flip chart requires the making of a series of pictures, which are then stacked in the proper sequence of the story. On top of the stack, place a title page or front cover. Punch two holes at the top of each page and run a string through, tying all the pages together.

The flip chart is easiest to use if it is propped up on an easel or stand. As you tell the story, you merely flip to the next page that illustrates the events you are describing.

Moving Picture or Scroll Story

A moving picture or scroll story is a more elaborate means of illustrating a story. In this case you draw the story on a long roll of paper (which can consist of several pieces of paper pasted together to form a long roll). Attach each end of the roll to a cylindrical stick – a bamboo rod, a dowel rod, a short broom stick, even a pencil. Roll the story as a scroll. As you unroll this scroll, your story will unfold. You might also arrange the scroll inside a cardboard box so that the pictures appear as though on a television or movie screen.



Puppet Shows

Stories told through puppets are often the kind most dearly loved by children. There are many ways to make simple puppets, and many ways to present them.

A variety of hand and finger puppets can be made from used or discarded materials from your neighbourhood or home; for instance, stuffed socks. The puppets can have cloth bodies and papier maché heads, or heads made of potatoes, hollow balls, wooden spoons, or clothespins. "Finger puppets" can be made from the shells of peanuts, from pieces of cloth sewn to fit over a finger, from cardboard or paper. "Stick puppets" or "rod puppets," as the name implies, are homemade, simple figures tied onto sticks or thin bamboo rods. In some areas "shadow puppets" are popular: puppets and stage are illuminated from behind; a thin white cloth or paper covers the opening of the stage, and the viewer sees only the shadows that the puppets cast. You may know of still other styles of puppets that are particular to your country or culture.

The children should be allowed to handle the puppets although marionettes, which are enjoyable to watch, are usually too complicated for kindergarten-age children to manipulate. Through puppets the children learn to tell original stories and develop their imaginations. Often a child will say things through puppets that he would not feel free to say otherwise. If you listen to the children and observe their play with puppets, you can learn much about what they are thinking and feeling.

Where should a puppet show take place? It could be from a puppet stage made from cardboard cartons. Or you might drape a cloth over a table and the children can kneel down behind it, holding the puppets in the air for the audience to see. Similarly, you can string a cloth across a doorway and the children perform from behind it, with the puppets held above. There are many ways to set the stage for a puppet show.

Dramatization

After the children get to know a story well, they may want to act it out themselves. Special clothing or outfits can be created from whatever you have available in the dress-up section of the housekeeping corner. Props can also be devised from the materials at hand.

Throughout the year, the children should be growing progressively aware of written words and their significance. The various language experiences that a child encounters in the classroom all lead to a natural desire to read and write.

Different children are ready to read at different times, depending upon their level of maturity and their language background. It is unwise to force a child to practise certain reading and writing skills if he has not yet developed this background or the small-muscle coordination that reading and writing require.

You might, rather, spend your time teaching the children various readiness skills and, at the same time, work on enriching their language abilities. One key readiness skill is eye-hand coordination. There are many kindergarten activities that promote this skill- art projects, such as cutting and pasting; games with small parts to manipulate, such as small blocks, peg boards, and puzzles. Word games have the advantage of both building up a child's word bank and, if word or letter pieces are involved, giving him an opportunity to match and manipulate the small pieces of the game.

Having meaningful signs or charts about your classroom will promote the children's curiosity about words. Charts that involve the children themselves will encourage their desire to learn to decode the letter symbols - that is, to read.

Examples of signs or charts to promote reading curiosity:

Helper's Chart

Which children will be responsible for certain jobs, such as watering plants, feeding pets, handing out papers or snacks?

Calendar and Birthday Chart

What special events are marked on the calendar? Who has a birthday this month?

Weather Chart

How would you describe today's weather? Sunny? Cloudy? Rainy? Fair?

Labels Labels help to keep the room in order. A child places his belongings on a shelf or at a place that bears his name. He replaces scissors in a place marked "scissors." Crayons go into the container labelled "crayons." (Labels can be accompanied by pictures of the objects). Various pieces of furniture in the room (e.g., "table," "chair," "desk") may also be labelled so that children will associate certain word symbol configurations with the objects they represent. Labels are also to be found outside the kindergarten. Should you take a walk with the children, point out the various labels you see - street signs, names of shops, etc.

Two other meaningful pre-reading activities are these:

Letters Write and send letters to community leaders about the children's various concerns. For example, perhaps a fence is needed around the school to safeguard the children. The children can dictate the words, as they do for experience charts, and you write them down. Community leaders may be happy or even honoured to help if only you make them aware of such needs.

Invitations Parent participation is always to be encouraged, and the more the better. If you are planning a party or special event with the children, invite the parents and grandparents. Making invitations is a language activity that the children will enjoy, and such invitations also promote goodwill between you and the families of the children you teach.

"Can you show me the picture of the guitar?"

Classification of fruit.

Helping plants grow.

Nature is fascinating.

Science

Where does the rain come from? Why do leaves fall off the trees? How are baby chickens born? and cows? and frogs? What happens to a caterpillar? What keeps the stars up in the sky? Do you know what makes a rainbow?

Children are naturally curious. They want to know things. They begin their quest of exploring and learning about the world around them as soon as they are born; as they develop, they continue to learn, mostly through experience. They listen, they observe, they touch and smell. Children use all their senses to learn. In fact, "Scientists say that children who do not have rich sensory experiences in those early years never learn about the properties of matter in quite the same way in later years." (Association of Childhood Education International, Pamphlet 4.)

The way in which young children energetically investigate is really basic scientific activity.

TEACHING SCIENCE

Some kindergarten teachers are hesitant about teaching science because they think they do not know enough about the subject. You are not, though, expected to know everything; whatever you know is already enough for beginning a science programme in the kindergarten classroom. You can add to your own knowledge as you work with the children.

In some communities, teachers are given a prepared curriculum to guide them. It is best if such a curriculum is used only as a guide or suggestion for activities. You should be free to choose the topics you like best, to explore, and to gather information from as many resources as you can think of - from books and pamphlets, from wise people in the community, from testing out your own ideas. In science, the *search* for answers is basic.

Much of the scientific activity in your classroom should result from questions the children ask. It is the wise teacher who listens to the children and answers their questions honestly. If you do not know an answer to a question, it is always appropriate to say, "I don't know. Let's find out..." If you do know, don't answer too quickly. Allow the child to try first to discover the answer for himself.

You can guide your pupils to think carefully and to find answers by asking them leading questions. For example, if children are observing an object, you may ask questions as, "What does it look like? How does it feel? Does it make a noise? What does it do? How does it smell? Would it be all right to taste it?" Sometimes you can guide a child's thinking by asking questions that begin: "Have you ever noticed that...?" or "Why do you suppose...?" or "How can we find out?"

When children answer questions, they not only think - they also develop their vocabularies. It is important at this age for children to talk and to do. When children watch a phenomenon (e.g., a chicken hatching from an egg), encourage them to talk about the event and to describe it with careful detail. You may want to write down their words to read back to the group later.

Help children to look for relationships: comparisons, likenesses and differences, causes and effects. As they come to understand these relationships, they will be able to classify, to put things in an understandable order.

Science is fun to teach, and the children are eager to learn. Always remember, however, that you are teaching very young children. If you want them to learn, you must teach in ways they can understand. Adults can respond to a lecture or to someone talking and explaining to them, but it is difficult for little children to sit and listen for long periods of time. They need to use *all* their senses to learn, and they need to *do* - to participate actively in experiments, to manipulate material, to try things out, and to talk about what is happening as it takes place. Talking without doing is almost meaningless for a young child.

SETTING UP A SCIENCE AREA

Although scientific activity can and does take place almost anywhere, indoors and out, you should specify one place to be the science area - a place where you and the children can display your finds, observe them, and experiment. This area might be stocked with the following items:

Low set of wide shelves or table If you do not have a table, you can mark out a corner in the room by drawing a chalk line on the floor. (Like other "corners," the important thing here is that the children have a specific place to display science discoveries.)

Bulletin board or pin board This can easily be made from a cardboard carton, painted or covered with cloth.

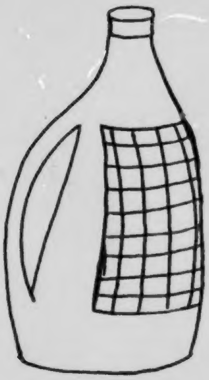
Balance scale An explanation of how to make a scale is provided later in this section, in the description of simple machines.

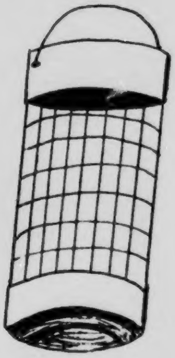
Magnifying glass If your class meets outside, keep the magnifying glass covered when it is not in use (a simple cloth covering is fine) because a hot sun shining through the magnifying glass at a certain angle can start a small fire. If your science area is indoors, it is advisable to tie the magnifying glass to a table or shelf where the children will be working in order to prevent its getting lost.

Aquarium A large glass jar or bottle is a nice beginning and is fine for snails and small fish.

Terrarium This is like an aquarium, but for small land animals. A jar or a box is sufficient.

Insect cage A simple insect cage can be constructed from two empty cans, held together by a cylindrical roll of wire mesh.





Small trays to hold exhibits The side panel of a carton can be used.

If you know what your goals are, you know what to work toward and you can make or buy equipment gradually. If, on the other hand, you have a large variety of items already on hand, be careful not to overstimulate the children by presenting too much at once. Concentrate on topics and activities which contribute to teaching specific concepts. The suggestions included here for scientific activities for young children are not presented in any particular order of importance, since what you choose to emphasise will often depend on the location of your school, the population or home background of the children, and the amount of money available to spend. The most important factor, however, in a successful science experience for the children is your enthusiasm and support.

PLANTS, ROCKS

Growing Plants

It is very exciting to watch a seed germinate and grow. Some seeds take a long time to grow and the children may lose interest in them. It is important, nonetheless, for the children to see and to follow the growth process of a seed or plant from its beginning. There are many ways to grow plants in the classroom. You need not have fancy equipment: seeds can be planted in an egg shell or a scooped-out potato. The following are some suggestions:

Sponge and glass Insert a sponge inside a glass jar or a drinking glass. Be sure the sponge presses against the sides. Place seeds around the sides between the sponge and the glass. Pour a small amount of water between the glass and the sponge and place the container in a sunny spot. After about a week (depending on the type of seed), the seeds should begin to send out roots. Some suggested seeds: lima beans, maize, lemon seeds, sweet peas, radish seeds, flower seeds.

Water dish Cut one inch (2-3 cm.) off the top of a fruit and lay the piece in a dish of shallow water. Place in a sunny spot and check frequently to be sure the water has not all been absorbed. New shoots should appear in about one week. Suggested fruits to grow: carrot tops, pineapple tops, turnip tops.

Water jar and sticks Stick three or four toothpicks or small sticks around the middle of a vegetable. Put the vegetable in a large glass jar that has space for roots to grow. Fill the jar with just enough water to cover the bottom part of the vegetable. Place in a sunny spot. Check the jar every few days to be certain the water level is high enough. Suggested items to grow: onion, garlic, sweet potato, beets. An avocado seed can be treated in the same way, except that it should not be kept in direct sunlight.

Wet newspaper or sponge Put a sponge or several layers of newspaper in the bottom of a shallow dish. Dampen thoroughly and sprinkle on seeds. Place the plate in a sunny location and keep the paper or sponge damp. Suggested seeds: grass seeds, lentil beans, string beans, watercress seeds, common fruit seeds.

Plastic container and soil Poke a few small holes in the bottom of a plastic container and fill the container with soil. Insert seeds into the soil and cover with about 1/4 inch (½ cm.) of soil. Water the soil and wait for the seeds to sprout. Suggested seeds: orange, lemon, and grapefruit.

Discussing and Experimenting

There are many things for children to learn about plants: the parts of a plant, for instance - the blossom, the roots, the leaves, the buds, stem, etc.; the fact that all plants need air, water, and certain nutrients; that some plants respond to sunlight and others to shade. Experiment with this last concept by planting two of the same kind of seed, one placed in the sunlight and the other in the shade. Watch to see what happens. Show the children how water is carried to the leaves of plants by placing a stalk of celery, or a white carnation, into a jar of water that contains food colouring or ink. Be sure the children watch carefully to see what happens.

Plants provide us with a great variety of food. In different plants the food is stored in different parts of the plant. Make the children aware that sometimes they eat the seeds of a plant (nuts, peas, beans), at other times the stems (celery, green onions, asparagus), and at times the roots of plants (carrots, radishes, beetroot). The children might want to decide - through actual observations - whether onions and potatoes are roots or stems. Have them see that tomatoes as well as peaches and apples are the fruits of plants.

Take the children for a nature walk and examine the plants and trees in your own neighbourhood. Discuss the life cycle of a tree and how trees help us (shade, fruit, paper, etc.). Talk about the different kinds of bark on a tree. Collect the leaves of different trees, if possible, and compare them for texture, colour, shape, size.

Are there some flowers which have a special meaning or importance to your culture (like the rhododendron in Nepal or the lotus to Buddhism)? Do you know any stories or legends about them? Ask the children to gather (if this can be done legally) samples of flowers according to various criteria - colour, size, smell. If there is bare ground around your school, perhaps you can use a section of it to plant a garden.

Rocks

There is one kind of garden which is easy to make indoors: a mineral garden, which is made from porous rocks, charcoal, and/or pieces of sponge. To make a mineral garden, paint the rocks, charcoal, and sponges a variety of colours, using water paint or food colouring (see art section). Arrange the objects in a shallow glass dish and pour over them a mixture consisting of 6 tablespoons water, 3 tablespoons salt, 6 tablespoons laundry bluing, and 3 tablespoons household ammonia. After that, sprinkle 3 more tablespoons of salt evenly over the entire arrangement.

As the water evaporates, it will leave behind salt crystals. Within a few hours, a coral-like growth will begin to form on the charcoal, rock, or sponge. If you place a stick in the mixture, the crystals will grow on the stick. Your mineral garden will thrive for several days, after which you can encourage it to continue growing by adding a teaspoon of ammonia.

Rocks need not be used only for a mineral garden. Have the children collect different types of rocks and bring them to the science corner. Look for fossils in the rocks.

ANIMALS

There is much for little children to learn about animals. First concentrate on animals from your own environment, whether they are farm animals or pets.

Getting to know about and caring for animals at first hand is ideal, as the children can learn how to handle them, how to feed them, how to clean their cages, and how to be gentle with them. Taking care of animals will also help the children learn responsibility. Kindergarten children are not yet ready to carry the full responsibility of caring for a pet or farm animal, but they certainly can be helpful. You, of course, will have to be the main care-taker. Popular pets for the kindergarten are turtles, fish, cavies (guinea pigs), and rabbits. Be certain that you have the facilities and desire for a pet before undertaking a project.

What can the children learn about animals? There are many different kinds of animals. Some are day animals and some are night animals. All animals need food, water, and shelter. Some animals swim, others crawl, walk, or hop; still others fly. An animal's physical characteristics give us clues as to how it moves: Does it have wings? flippers? claws? legs?

Different animals have different coverings. Some have coats of fur. Others have wool, skin, feathers, or shell. An animal's outer coat may be its home: a turtle (tortoise), for example, lives in its shell. Animals have different kinds of homes (nest, hole, den, hive).

What do different animals eat? How do they find their food? How do animals protect themselves? Do they sting? Bite? Camouflage themselves? Hibernate? Do they use claws, horns, or a special odour?

Some animals change their form as they grow: e.g., a tadpole hatches from an egg, then grows into a frog; a caterpillar turns into a butterfly. Nevertheless, each animal reproduces only a like animal. A butterfly's offspring will always end up as butterflies. An animal will never give birth to a different species (kind of animal).

It is interesting for children to learn about animals and their young, including the ways baby animals are born. Another aspect of animal life, and one the children must sometimes cope with, is death.

If there are no animals in your school environment and no possibility of having pets, take the children on an excursion to see live animals - an animal farm, a zoo, a fish hatchery, a place where silk worms are raised, even a pet shop.

You can encourage the visit of *birds* to the kindergarten area by building a simple bird feeder. First cut a window into an empty plastic container; place grain, seeds, berries, or suet inside; hang the container from the branch of a nearby tree or outside your window, and wait for the birds to come.

Don't forget that *insects* and other crawling creatures also hold great fascination for children. If you catch a butterfly and place it in a large net cage, it will eventually lay eggs that will hatch.

The *industrious ant* is interesting to watch. Should you decide to make an ant farm, be certain to collect ants only from the same colony. Ants from different colonies do not get along with one another and fight. Making an ant farm will allow the children to see what ants do underground. To make an ant farm, first put a jar without its lid upside down in the centre of a larger jar. Completely fill the space between the jars with loose or sandy soil. Collect no more than twenty ants for this farm and place them in the large jar; cap it with either its lid or a piece of plastic and a rubber band (to keep the ants from escaping).

The ants will get enough air when you lift the lid to feed them, which should be done once a week with a few grains of bird seed or grass seed and a few drops of sugar water. Keep the jar away from direct sunlight and extremes of hot or cold. After a day or two, the ants will begin to build their homes, tunnels, and rooms and the children will be able to see activity through the glass.

For studying *worms*, place a few pebbles in a glass jar and fill the rest with earth. Then add the worms and cap the jar. Punch holes in the lid for air. Wrap a wide strip of black paper around the outside of the jar. Since worms prefer darkness, they will build their homes near the black-covered walls. After a week or so, remove the paper for the children to see what the worms have built.

WATER

Science activities involving water (see also section on "Water, Sand, and Mud,") can take place either outdoors or indoors. If outdoors, you need not worry about spills. If indoors, it is wise to cover the working area with plastic and to keep a sponge or cloth nearby for wiping up spills. It is best to try out each water activity yourself before experimenting with the children.

Show the children that water has a skin. To do this, fill a glass to the very top. Ask the children to look carefully at the glass. Does the top of the water look higher than the top of the glass? Why doesn't the water spill over the edge? Have a child dip his finger into the water and put a few drops on a table or board. The children should notice that the drops are round. The outside of a water drop is like a skin that holds the water together.

Place a needle on a fork and hold it near a dish of water Let the needle roll off the fork onto the water. The needle makes a dent in the water, but floats. The top of the water is like a skin that holds the needle up. (What does this suggest about insects that can walk on water? Their legs dent the water, but the skin of the water holds them up.) If you push the needle down, the skin will break and the needle will sink.

Learning which objects can float and which sink is an appropriate kindergarten activity. Children should test a large assortment of objects: corks, used matchsticks, seed pods, stones, sticks and twigs, jar lids, coins, nails, bamboo, empty nutshells, a spoon, a plastic cup, tin cans of various sizes (with holes in the bottom of some). The children can place one object at a time on the water and note what happens. (Does the object float or sink instantly to the bottom?) Is there any noticeable difference between objects that sink and objects that float? Does size make a difference? You may think of still other questions to ask the children.

Recording Discoveries

As the children experiment, you may want to keep some scientific records. The floating-sinking experiment is tailor-made for record-keeping, since it involves classification into two different groups - (1) objects that float and (2) objects that sink.

There are many ways to record discoveries. One simple way, even for children who cannot yet read, is the following: Draw a line down the middle of a piece of cardboard. At the top of one section, write the words, Objects that Float; at the top of the other, Objects that Sink. A simple illustration beside each caption will suggest its meaning if the children forget what the words mean. (Do not neglect to write the words, however. Even if children do not yet read, it is important for them to see that letters make words and that words have meaning.)

After the children have tested the objects and observed the results, have them dry each object (with a cloth) and glue it onto the appropriate side of the chart. Hang the chart on the bulletin board in the science area for the children to study.

A class discussion about this experience, or about any science activity, can help the children remember what they learned. Do the children know the names of all the objects tested? Language development is important in science, too.

Evaporation

Tell the children to look at puddles after a rain. Using a stick, chalk, or pencil (depending on where the puddles are), draw a line around the puddles. Look at the puddles again the next day. Where did the water go?

Similar problems: When people wash clothes and hang them up to dry, where does the water go? What happens to the water from rivers, lakes, and streams when the sun heats it? (The sun heats the water, sending water vapour - invisible drops - into the air; this is the process of evaporation. Later the water will return in the form of rain. This happens when the water in the air is cooled or disturbed.)

Water changes form

Do you live in an area where it snows in the winter? If so, have some children fill a can with snow and take it indoors. What happens to the snow? (It melts and changes into water.)

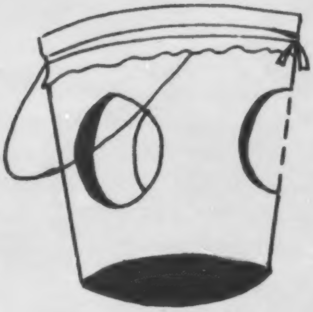
Draw a line around this can at the level of the water and tell other children to take the can outdoors again. Leave it there overnight. Remind the class to look at it the next day. What happened to the water? Did it freeze? Did all the water turn to ice? Have the children compare the level of the frozen water with the line you draw. Is there a difference? What happens to the water in rivers and lakes when it is very cold?

What happens to water when it is boiled? Boil a saucepan of water so that the children can see the steam rising. It is also important for children to learn the proper vocabulary: the vapour coming out is not smoke; it is steam.

Water can magnify

You can make a water lens that will make objects appear larger. The lens should be used out of doors or in a sink or tub since the water could spill.

You will need a soft plastic pail. (Buying such a pail or bucket may involve an expense, but it is less expensive than buying a magnifying glass.) Draw three circles around the outside of the pail and then cut them out with a penknife or long scissors. (Only the teacher or another adult should do this.) Cut a piece of clear plastic-wrap a few inches larger than the pail opening. Lay the plastic loosely over the pail and secure it with a rubber band. Pour water very slowly onto the plastic-wrap. The weight of the water will cause the plastic to sag, creating a lens shape.



To test this magnifier, have the children put objects through the cut-out holes in the sides of the pail and hold them beneath the plastic. They then should look through the magnifying water lens to examine each object. It is interesting for children to look at their skin, fingers, and hair under the magnifying lens, as well as insects and any other small objects they choose.

SIMPLE MACHINES

People use their bodies, with their muscles, to lift, carry, and pull. Machines help make this work easier. The following are examples of simple machines that can be demonstrated in the classroom and used with young children.

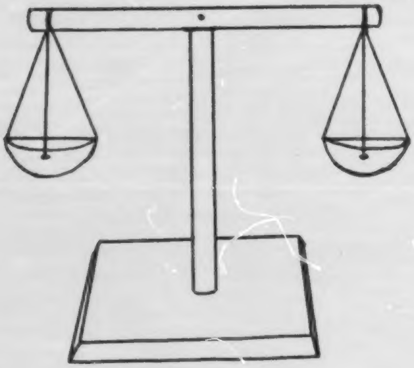
Pulleys Demonstrate to the children that it is easier to raise an object with a pulley than it is to lift it with their hands. Loop a rope over a low tree or, for indoors, a high pipe or beam. To one end of the rope tie a bucket filled with sand or earth. Have a child grasp the other end with both hands and pull the rope downwards. What happens? The action lifts the bucket off the ground. The rope around the tree branch or pipe acts as a pulley. The children can take turns trying to lift the bucket, first with their hands and then with the pulley, to see the difference. Perhaps the children can think of other uses for pulleys — raising a flag on a flagpole or pulling a clothesline, for example.

Lever Show that it is easier to lift an object with a lever than to pick it up. Place a long board over a block of wood or stone. Put a heavy object at one end of the board and push down on the other end to lift the object. Point out that scissors and seesaws are also types of levers.

Ramp (Inclined Plane) To make a ramp, or an inclined plane, place a short block under one end of the board. Slide or roll an object down the ramp to demonstrate that it is easier to slide or roll an object than it is to carry it. A very simple demonstration is to slide a bottle cap through a paper tube. An example of an actual ramp is a sliding board in a playground.

Wheels Show the children that it is easier to roll something on wheels than it is to carry it. Have the children first try to carry a bundle of twigs, then to place the twigs in a wagon or a wheelbarrow and wheel them. Encourage the children to suggest other examples of machines on wheels. They can make miniatures of wheeled machines from maize cobs, cotton reels, wooden rollers, old wheels, cartons, cords, and wires.

Balance Scale A balance scale for weighing is easy to make. Insert a stick or rod into a firm wooden base. Take a second rod and bore a hole midway between the two ends. Insert the first into the second and nail the second horizontally to the top of the first rod. With string or rope, tie containers of equal size to each end of the horizontal rod. The scale is now ready for weighing. A set of weights can be made by putting various amounts of sand or soil into containers.



Other Machines Save old clocks, motors, egg beaters, etc., for the children to take part and explore.

MAGNETS

Magnets attract iron, but let the children discover this for themselves. On a tray place a variety of objects, some containing iron and some not. The children can test each of the objects to see what the magnet attracts and what it does not. They should try objects around the room as well as those on the tray - door handles, keyholes, etc. Afterwards they can classify the objects into two categories. Form two circles with string or chalk. Into one circle put objects that a magnet attracts; into the other, objects that a magnet does not attract.

SENSES

People - young children in particular - perceive and learn through their senses: touch, taste, sight, sound, and smell. The activities suggested here are ways of teaching children not only to use but also to sharpen their senses.

Touch - How do different things feel?

Make a "feeling box" by cutting a hole in a cardboard carton. A sack or a cloth bag can serve the same purpose. Place several objects of various textures into the box or bag. The variety of objects should feel soft, hard, smooth, rough, cold, hot (examples: sandpaper, burlap (yutta), sponge, coin, eraser, cork shell, cotton wool, feather, something wooden, something plastic, and various kinds of fabrics).

Have a child close his eyes, reach into the box, and remove one object. Can he describe the object and guess what it is before opening his eyes? The children might be allowed a quick glance at all the objects before they are put into the box.

Taste — How do different things taste?

Place a variety of common foods on a tray or plate. Have the children close their eyes. Give each child a small amount of food to taste. Can he guess what he is tasting? Can he do it if he holds his nose as well as closes his eyes? Vary the foods to include things that are sweet, sour, bitter, salty, spicy, and bland.

Sight – How do things differ in appearance?

On a tray or cloth place items which feel the same but look different (e.g., crayons of different colours, cups with and without designs). Have a child close his eyes and lift one object. Can he describe it? You can guide him by asking leading questions: Is it big or small? Hard or soft? Is there a design on it?

A variation is to make a design with blocks on the floor or on a table. The child takes a look at it, then closes his eyes. While the child's eyes are closed, take apart the design. Upon reopening his eyes, the child must then reconstruct the design.

Sound – What can you hear?

Create a variety of sounds: e.g., a pencil dropping to the floor, a spoon in a glass, opening and closing a door, whistling. The children, eyes closed, must try to guess what each sound was and how it was made.

Another activity that promotes sound discrimination is the following: Fill each of a number of small cans with different grains, seeds, or salt and cover them. The children should shake the cans, listen carefully, and then place them in order according to sound – loudest to softest or vice versa.

Smell – What odour do different things have?

Place a variety of items in a pill box or small jar. Punch holes in the lids. Cover the outside of the container with paper to hide their contents (e.g., onion, sawdust, garlic, soap powder, coffee, mint, orange peel, various spices). It is up to the children to sniff the various odours and try to guess what they are.

WEATHER AND THE SKY

Children can learn much about weather and the sky simply by observing. Using their senses, they can note that the sun rises in the morning and sets in the evening, that the moon and stars appear at night, that rain is wet and thunder is loud.

Understanding a Calendar

The *calendar* is related to cycles of events in the sky, and prompts many questions: What are the characteristics of day and of night? How many days are there in a week and what are their names? How many months comprise a year? What names do they bear? Your society may use two different calendars – a secular one and one that is particular to the society.

To strengthen the children's understanding of the somewhat abstract notion of a calendar, you might make puzzles or charts that the children can manipulate as they learn. One of the simplest charts for learning and reviewing the days of the week or the months of the year is a cardboard sheet with vertical slits, into which can be fitted a strip of paper bearing the name of the day or month. For each change in date, the paper can easily be removed and a different one inserted.

In some countries, each day of the week is represented by a specific colour; in others, by a number. Charts or representations can be made accordingly. In the latter case, for example, the children can string beads, placing one bead on the string on the first day of the week, two beads on the second day, and so forth.

For younger children, a calendar using only the days of the week is sufficient. Older children, who can count to higher numbers and have a greater ability to abstract, are ready for fuller calendars – the page of a whole month, for example.

Weather Experiments

Once the children can identify the days of the week, they are ready to talk about the *weather* on that day. They may note that the trees are swaying or that they can hear the wind. It is important for the children to know the names of the various weather phenomena – snow, fog, hail, rain, etc. – and to know the differences between the various types of weather.

A weather chart can be made from a piece of cardboard on which are pasted or drawn pictures representing the sun, wind, clouds, and rain (and snow, if you live in a snowy climate). In the centre of the chart, attach a pointer or dial that the children can move to match that day's weather to its corresponding picture.

In many places people collect rain water. You can make a scientific study with the children to determine how much rain falls on each day of the week. Take seven jars or bottles of equal size and label them with the names of the days of the week. Set the bottles outdoors in a safe place. (You might dig seven holes in the ground and insert the bottles.) On

Monday uncover only the jar labelled "Monday." The other jars should remain covered. The next morning the children can look in the jar to see how much rain, if any, fell on Monday. Then cover the "Monday" jar and uncover the jar labelled "Tuesday." Report this process throughout the week. At the end of the week, or the beginning of the next, the children can line up the labelled jars and compare the amount of rain that fell on each day. They may want to make a new kind of calendar on which they draw pictures showing the amount of rainfall for each day.

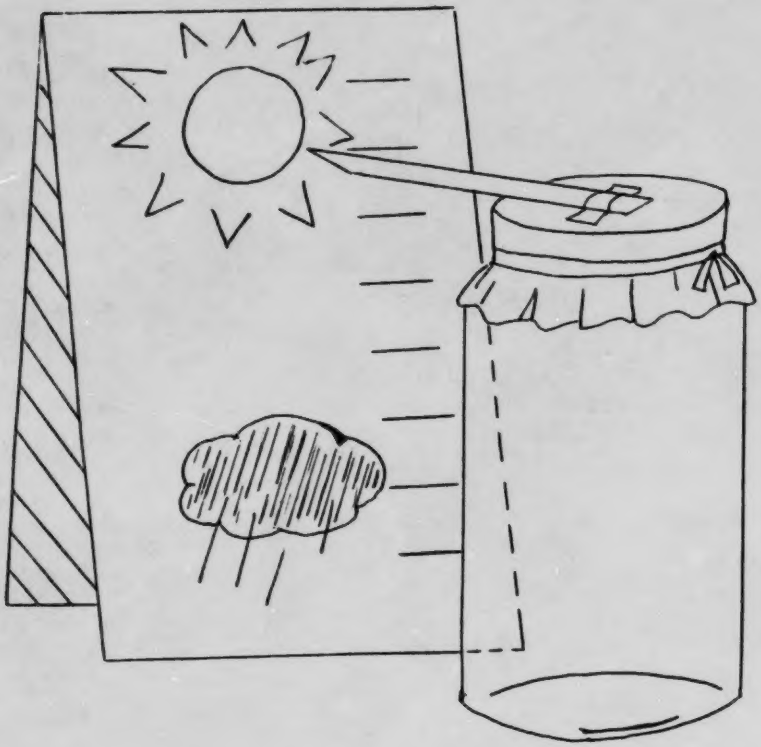
Discuss with the children how the temperature changes through the day. What is the hottest time of the day? When is the sun directly overhead? What is the temperature when the sun goes down? Here science can carry over into other areas of the curriculum. What kinds of clothes do people wear when the weather is hot? When it is cold? If a thermometer is available, demonstrate how it works. Perhaps have the children keep a chart of temperature changes. A zipper can be used to simulate a thermometer. Attach the zipper to a board. When the weather is warm, the children can raise the zipper. In cold weather, they can lower it.

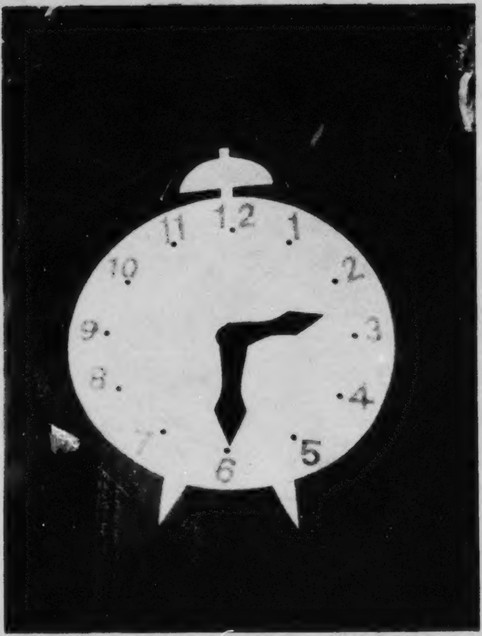
It is fun for a child to feel like an "expert" and to forecast the weather by looking at the *clouds*. You can teach the children to recognise the various types of clouds they are likely to see in their own environment, in particular the difference between the darker rain clouds and the puffy, white clouds that represent clear weather.

Air is all around us; but because it is invisible, it is a difficult concept for children to understand. Try a few simple experiments to show the children the existence of air. Blow bubbles that are filled with air and that float in the air. Demonstrate the use of an air pump. You can show that air has force and presses against the earth by making a barometer, which measures air pressure.

To make a barometer, cut a large piece of balloon and stretch it over the opening of a clean, wide-mouth jar. Use rubber bands to hold the balloon in place smoothly and tightly. Take a straw or reed and cut both ends to a point. Lay the reed on the balloon and tape one end to the centre of the balloon cover.

Now make a chart to set next to the jar. At the top of the chart, draw a sun; at the bottom, clouds with rain. The untaped (free) end of the straw will serve as a pointer; its movement will indicate pressure changes as it points up or down on the chart.

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Homemade clock.

Counting activity.

How many fit on the string?

Mathematics

When you teach mathematics, you are asking the child to engage in abstract thinking. You are asking him to see the relationships between objects and events. You want him to be able to put objects and events into an orderly sequence; to compare quantities; to see that numbers can be understood in a wider context ("I am five" has a different meaning from "there are five of us"); to be able to match, to group, to sort, to classify, and to categorise.

While much of this is, indeed, very abstract, it has its basis in concrete experiences. Thus, the three year old who has tried repeatedly to get through a narrow space with a wide object - his tricycle, a doll carriage, a big box, a chair - will readily understand what you mean when you say that the door is not *wide* enough or the passage is too *narrow*. He has experienced it himself. Many similar experiences form the basis for a later understanding of geometry.

TIME AND SPACE

Sequence is an important aspect of mathematics. Any sequence of actions which repeats itself frequently and which helps the child acquire a sense of the orderly progression of time and of coming events (as discussion of the days of the week, seasons of the year, in addition to daily events) helps to lay the foundation for later mathematical understandings. Young children usually experience a sense of confusion in relation to time. You may have had an experience very much like one of these: the boy who asked his mother when it will be "soon"; the girl who said her birthday was "yesternoon"; the three year old who said: "If we go home, then it will be 'today'"; or the four year old who wanted to pack "today" and start "yesterday." It is best, therefore, to stay in the "here and now" of familiar daily events as you wait for the child to mature into an understanding of the more distant past and future happenings.

Spatial relations is another aspect of mathematics. Children crawling under a table or through a box, jumping over an obstacle, climbing up a tree are being taught mathematics if the teacher uses the prepositions of spatial relations on these occasions. Thus *near* and *far; up* and *down; over* and *under; next to; in front of;* and *behind* are more than words. They are sensori-motor experiences. They are routes the child has travelled many times which have gradually been translated into meaningful language.

Physical properties of objects involve mathematics. Just as the young child has many experiences in time and space, he acquires a knowledge of the physical world of objects around him. A stone, a rock, a log, a piece of wood, a feather, or a toy may be *heavy* or *light*. He may try to pick it up and be unable to do so; or it may be so light that it is blown away by the wind. As the child plays, he learns about the physical properties of objects - *square, round, flat, hard, soft, light, heavy, hollow, solid*. By the time he starts to learn about weights and measures, or geometry, he probably will have gained a solid base of meaning through his experiences.

Sorting by size and arranging objects in sequence by size (for example, building a tower with rocks or blocks, the biggest at the bottom and the "littlest" at the top), and thus comparing, mark the beginning of measurement. Here the child is dealing with such concepts as *bigger, smaller, longest, shortest, tallest, the same as, more than, less.*

AND NUMBER

One of the most important properties of objects for the child is that they can be counted. Number concepts start when the little child can distinguish between *one* and *many*. When he is given one of something and he cries "more," he has completed his first lesson in mathematics. Counting will begin as "one, two, many"; then progress to some non-sequential pattern; and finally, by the time he is around five or six years old, the child will be able to tell you how many objects there are in a collection by counting them, provided it is limited to between five and ten objects.

There will be great differences in abilities and understanding of space, time, and number among the children who come to you, just as there are wide gaps among them in their language development. It is important to seize upon experiences that come up in the course of the day to help develop these concepts. There probably will be little need to plan special experiences for most children.

This means that you have to be aware of the mathematical components of common events and of the need to translate them into the language of the child. For example, if a child wants something that is on a shelf, say to him: "It's *up* on the shelf." When three children fight over a toy, say: "*First* it's Kori's turn, Bala is *second*, and Linda is *third*." As a child finishes a chore: "You did that *quickly*." When a child brings you something he has found on the way to school: "My, that rock is *heavy*." While two children are scribbling with crayons, you might ask, "Who has *more* crayons, Irit or you?" The list of opportunities to verbalise these ideas for the child is endless.

A child may use the vocabulary without necessarily having acquired the ideas behind the words. He may talk quite easily about *more* or *less, up* or *down* and yet have no idea which number is more or which way is down. Watch, therefore, how a child matches actions to words and words to action. Give commands and see whether he can carry them out or even whether he uses the correct expression. Does he say, "I have more now," when he really has less? Is he confusing opposites, as did the child who consistently told his teacher he was moving down when he was really going up? Is he completely wrong, looking in back of him when told that the ball is up on the shelf.

Rote and Rational Counting

Many a six year old arrives in school and fluently counts to ten, to twenty, or even to one hundred. When a youngster has memorised and is able to rattle off a number sequence in this way, he is *counting by rote*. Ask him to give you eight coins from a pile. Did he give you the correct number? If he did not, watch him as he counts and moves the coins from the big pile to give you the desired number. You may find that action and counting words are not coordinated when he moves a coin over to your pile and says "One." The matching of counting word (numeral) to the object (or its picture) is called *rational counting*. Rational counting means the ability to count correctly the number of items in a collection. A child will need much practice to master this skill. To begin with, the size of the collection should be limited to five or six objects at most. Exchanging collections of toys when a child is playing with them or interrupting a story to count the number of flowers (or children or animals) in the picture are excellent ways to practise this skill.

The children should first learn to count by rote, which is more a function of memory. If you teach nursery rhymes and simple songs whose verses contain number sequences, this will be an unself-conscious way of teaching the children how to count or to reinforce what they recently learned. The children should have a mastery of rote counting before going on to rational counting. However, you can work in stages. If a child can count to five by rote, you might work on rational counting up to three or even five although he has not yet mastered rote counting to ten.

One-to-one matching is another pre-number skill which can be put into the daily activities of the kindergarten. When materials must be given out and shared, or when boys and girls are being paired off - one cookie to one child, one boy to one girl - the children are learning one-to-one matching. ("Today we have the same number of chairs as children" is like the mathematical equal sign.) If a situation arises where there are more children than table settings or not enough spoons per plate. it is only natural for you to ask: "How many more plates do we need?" Musical chairs and similar games where there is *one more* can be used to the same end. Many such mathematics opportunities arise during the course of the day.

For those children who seem to need more practice, you might want to use a flannel board and felt cut-outs: ask the children to put an egg in each egg-cup, a ball into every box, or to pair triangles and circles. Stories in which you use the flannel board to demonstrate one-to-one matching and where you let the children do the matching are excellent ways to help them grasp this idea. Some will even find it fun to have some problems presented to them *orally* in story form; this will accustom the children to doing addition (and subtraction) in their heads.

Conserving Number

Learning to recognize at a glance the size of a group of objects without having to count them - i.e., knowing that there are five cars in that collection or three or six - will take more time. When a child has realised that this group of five remains five no matter how it is arranged, he has learned to *conserve* number (or quantity).

At this point he is ready to work on addition and subtraction. He may even have begun to do sums on his own. If, however, he is "taught" to add without the basic mastery of rational counting and the conservation of number, mathematics may be difficult for him to learn in later grades.

Recognising Number Symbols

The mechanics of learning to recognise the number symbol can be introduced toward the end of the year. Learning to read numerals, and a little later to write them, may be necessary for mathematics in the long run, but it is a technical skill, not needed for understanding mathematics itself. A young child may, in fact, do exceptionally well in arithmetic but have great difficulty in learning to read, including the reading of numerals. He figures everything out in his head. Children should first be taught to read (identify) the numerals 1-5. The face of a clock, the dial of a telephone, car license numbers, street signs, bus number signs, money, stamps - all are useful items where numerals appear in a familiar context.

Reading numerals and rational counting come together in activities such as: Give each child a tray full of beads or stones and hold up a sign showing a numeral. The children must then count out and put aside the corresponding number of objects. The child who does not know how to count rationally cannot, of course, be expected to do this.

Not all children proceed at the same pace. It may well be that some will not know how to read and/or write numerals at the end of their kindergarten year. Some may not be able to cope with arithmetic or mathematical concepts until they are six or even seven years old. It is up to you to give the children plenty of informal play activities that will strengthen these concepts.

MORE USEFUL ACTIVITIES

The equipment already on hand and meant primarily for other activities - like a climbing apparatus, a balance beam - can all be used to mathematical advantage. Story books can be turned into a math "lesson" - counting the number of specific objects in a picture, finding pairs of things, discussing which group is larger in the picture.

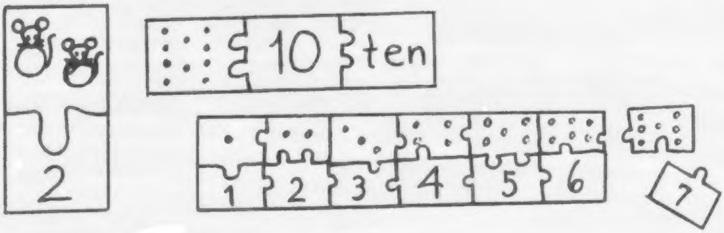
The sandbox and water table can also provide activities for mathematical concepts: what is needed with them are many containers of varied sizes and shapes, from tiny medicine bottles to large jugs, from old one-cup pots to large frying pans. Much pouring and informal measuring takes place and "too much," "more," "too little," "less than," etc., find practical expression.

Blocks offer experience with shape, size, and weight, in addition to number. If the set of blocks is based on a specific unit size, the children can begin to acquire a feel for fractions. When a child builds with blocks, he often sees the beginnings of symmetry and he may better comprehend the idea of height. When he builds, breaks it apart, then puts it together again, his actions help to establish the notion of *reversibility* and thus prepare the learning of subtraction. If he puts the blocks away by size, he must classify them. There may be occasions to count blocks, as children share them among themselves. Blocks of different shapes other than square or rectangular (round discs, triangles, semi-circles or arcs) help the child's sense of geometry. Shapes can be taught to children quite naturally as they are named: "Please give me the *triangle*"; "I'd like that *round* block - I'd like to trace it because I need a circle"; "This *arc* will make a nice roof between those two columns." (See chapter on "Blocks.")

Informal ways of teaching shape with blocks might be followed up with more directed, formal lessons. Shapes can be made out of cardboard, and coloured. You can ask children to hold up a triangle, a circle, or a rectangle. They can be allowed to trace and to colour the shapes or to make "pictures" with the shapes by building with them. Here, again, the objective should be to make sure that the child recognises the four major shapes - triangle, rectangle, square, and circle - and that he tells, gives, or draws the correct shape when asked.

Cooking is yet another popular activity that can involve mathematics. The children measure and count as they add ingredients. They take turns in stirring or adding ingredients (usually in a specified sequence).

On a shelf or table, keep a row of boxes, each of which has been labelled with a numeral, from one to five or ten. Children can be asked to count out the appropriate number of objects, seeds, pits, shells, pebbles, buttons, etc., to put into these boxes. Number puzzles can be made in which a numeral is shown on a piece of cardboard, and the child must match this numeral card to a picture showing the same number of objects; the two pieces will fit together only in a correct match.

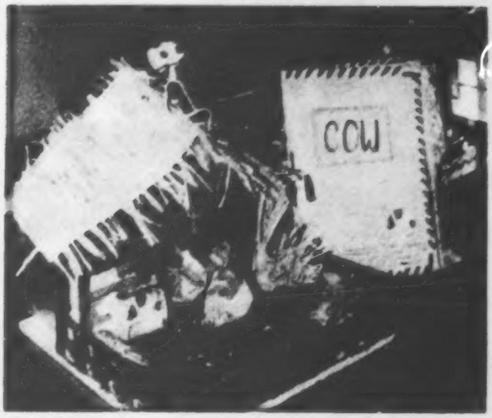


Somewhere in the room there should be a clock, preferably a real one, so that the children can be shown when a certain event will happen. Telling young children that at 9 o'clock they will go out for a walk or have a snack is not too meaningful for them. It does not help them for later learning as does showing them the clock and saying, "When the big hand will be here, at 9 o'clock, we will...." If it is difficult to obtain a real clock, use a broken one or make a clockface yourself by attaching two carboard hands to a round disc. Even a broken or home-made clock can at least be used for reading numerals and for the beginnings of learning to read time. Real or home-made, the clock should be placed at the children's eye level to make reading it easy.

To aid in the beginnings of measurement, collect an assortment of ribbons, pieces of yarn, rods, and sticks as well as regular rulers. Children can be asked to find out how many pieces of ribbon of equal length are needed to stretch across the length of the table or to make a cover for a doll.

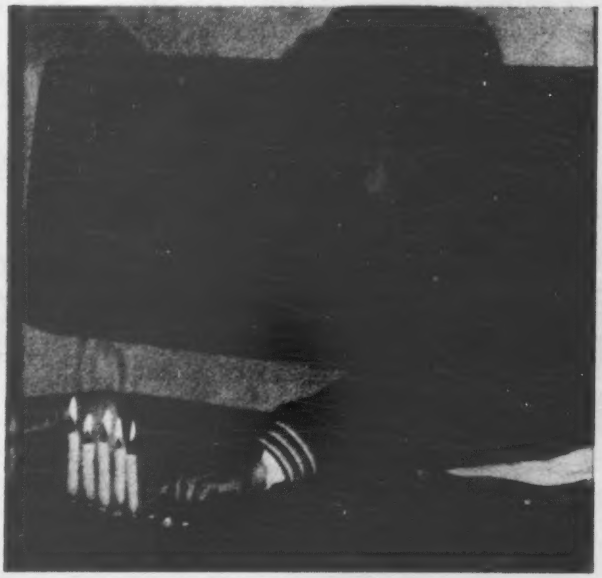
Mathematics teaching at the kindergarten level can indeed be an adventure for teacher and child alike. A guiding principle might be: "Let's see how many different ways I can find to let mathematics readiness creep into my classroom without the children's being aware of it." Your imagination is the limit and the children will be the wiser for it.

Role-playing.



Model of a farm.

Holiday masquerade.



Feast of the lights.

Festival.

Social Studies

The teaching of social studies in the kindergarten is based upon the child's ever-expanding knowledge of himself, of others, and of the world about him. The teacher's role is to try to clarify that knowledge and to broaden it. A suitable programme of social studies, therefore, works from the child outward, and consists of the child, the family, and then the various aspects of the child's greater environment, the neighbourhood or community. Within this framework, social studies and activities can and do take place both indoors and out.

THE CHILD (SELF)

A kindergarten child thinks more in terms of himself than of others. For example, if two relatives - one a child, the other an adult - meet each other after a long separation, the adult may remark, "I haven't seen you for such a long time." But if the child were to respond first, he would more likely say, "You haven't seen me for a long time."

That a child thinks in terms of himself is evident. How and what he thinks about himself are not so evident and they differ in each child. There are several activities you can initiate to emphasise these points both for the children and for yourself. Ask the children to draw self-portraits. How does each child represent himself? Does he appear strong? Small? Is he smiling?

Obviously, these drawings are not going to be done as realistically as older children could do them; nevertheless, they will provide some insight, since such a drawing holds meaning for the child.

A similar activity is done with large pieces of paper, each piece at least as long as the child is tall. (Several sheets of newspaper can be pasted or taped together to form one large piece.) The activity requires cooperation between two children. One lies down on the floor on the paper, with his arms slightly out and his fingers spread. Using a crayon, the second child traces the body of the first. Then they alternate, the second child lying down on another piece of paper.

After each child has had his body traced, he takes his own outline and colours it to look like himself (herself), including the colour of the clothes he is wearing, the colour of his hair, etc. Help the children to cut out their drawings and hang them about the room. Be sure to label the drawings so that each child can proudly point to both his name and "himself."

Drawing the child's body presents a good opportunity to talk about the parts of the body. What do you call them? What can you do with them?

Begin with the face. Most kindergarten children are aware that they have two eyes, two ears, one nose, and a mouth. They are less aware of, and often do not know the words for, eyebrows, eyelashes, cheeks, and the chin. You can help them learn these through songs, games, and finger plays.

Point out the emotional aspects of faces. What do faces express? Each individual expresses himself in a different way, and it shows on his face. Ask the children, "How do you look when you are happy? Surprised? Sad? Thoughtful? Can you show me how you look when you are angry?" Have children make masks, creating a face with all its parts. Did they forget the hair?

All these activities make a child more aware of himself and of what makes him an individual. It is important to stress the differences among children. Whose hair is curly and whose is straight? Do some children wear eyeglasses? Which children are very tall? Which are short? Who has bigger hands? Is anyone missing a tooth? Emphasising the differences among children helps to make differences acceptable.

Teaching about different parts of the body introduces the children to some basic information about health and good hygiene habits. Discuss personal cleanliness. Show the children the correct way to brush teeth. Check with them to know what time they go to sleep at night. Sometimes a teacher can have more influence than can a parent in getting a child to go to sleep on time. Plenty of rest may seem more important when a child learns about it in school than when a parent commands it. Teach the children about the value of good nutrition and even prepare with them some samples of nourishing foods. The more concrete you can make your activities, the better the children will learn. Doing is preferable to lecturing.

THE FAMILY

Who are the members of a family and what are their roles? Discuss with the children how family members are related to one another. You may ask, for example, "What is your mother to your father? What are you to your parents? What do you call the mother of your mother?" Further discussion may include what Father does, what Mother does, what they do for the child and the family.

Have each child draw a picture of his family and then explain it to you. As he does so ("This is my Mommy, this is Daddy," etc.), write the names of the family members next to his representation of them. Is anyone missing? (The new baby brother, perhaps?) Did the child include himself? How did he represent himself - big and in the center, or small and out of the way? You may notice that he has made some family members larger and more dominant than others. The larger a figure, the greater its significance to the child. When a child draws a picture of his family, he is sharing many of his thoughts and feelings about his family and himself.

Where do families live? Not all families live in the same type of house. Ask the children: "What does your home look like? Is it a tall building or a little house? Does it have steps inside? Is it round? Square? Do you grow your own food in a nearby garden?"

Make comparisons between the ways in which your children live and the ways in which children in other places live. You can make the children's understanding of what a "home" is, in terms both of its physical structure and emotional content, more concrete by guiding them with further questions: How many people live in your home? How many rooms are there? Where do you sleep? Such questions can lead to a discussion of types of homes, rooms, and furnishings. Finally, provide the children with a variety of art materials to use in representing their homes (see art section).

THE NEIGHBOURHOOD (COMMUNITY)

Expand the topic of home into the subject of the immediate neighbourhood. The best way to learn about one's neighbourhood is to go out into it. Take the children on a walk around the kindergarten community. What significant things do they note? Is there construction going on nearby? Are cattle grazing across the way? What kinds of buildings do they see? Don't forget to talk about the kindergarten building itself.

After exploring the neighbourhood, make a representation of it with the children. You might draw the layout of the neighbourhood with chalk on the floor or with a stick in the sand or earth. The children can also build a large model with blocks. Show the children how to make it big enough so that they can actually walk in. After they have played with the large model, they will be ready for more detail. The children can create a miniature model by using scrap materials, small boxes, or other empty containers for houses. Real grasses and twigs could be glued onto the model to represent roofs, trees, grass, etc.

If yours is a neighbourhood kindergarten - that is, all the children who attend live in the vicinity - you can begin some simple map-making. On a large piece of cardboard, draw a map that shows the location of each child's home; and next to that spot, clearly print the name of the child. The children can draw their homes, cut them out, and paste them onto the map at the correct location.

The map may be hung on the wall for the children to study. Better still, let the children actually use the map: Make some small props that are suitable in size to the map - vehicles from match boxes, small dolls from clothespins, etc. Set the map and its accessories on the floor or on a low table. Rich dramatic play will ensue as the children learn their way around the neighbourhood by "visiting" their friends (for instance: "To get to Ntsoaki's home, I must go straight, and turn at the big tree.")

You may want to make an actual model of the neighbourhood. Such a model, constructed of boxes and scrap materials, is more realistic than a map, and therefore easier for the younger children to identify with.

By mapping or making a model of the neighbourhood, the children become more aware of the services and facilities available to them and their families. There may be a market place with many kinds of foods, goods, and services. There may be a dressmaker shop, a barber shop, or a beauty parlor. A stall or store that sells food or supplies for animals, or even sells the animals themselves, may be a favorite place. Perhaps there is a post office, a health clinic, or a place of worship. The neighbourhood may boast a community centre, a sports field, a cinema, cafes, or restaurants. Or, there may be special places of interest, landmarks such as statues or parks.

After the children have become familiar with the various community services and facilities, make them aware of those who provide the services - the storekeeper, the carpenter, the policeman, the barber, the doctor or nurse, the teacher, the farmer, the dressmaker, the clergyman, etc. All are community helpers, and there are many ways of learning about them and their work.

You can, of course, always tell stories or show pictures about the various people in the community. However, the closer the children can get to the real person and his work, the more they will learn.

Invite some community workers to your kindergarten to talk to the children. Many children are afraid of policemen. A friendly visit from one may help to dispel their fears, especially if he explains that his work is to protect them and to help them get home if they ever become lost. Some children are afraid to go to a doctor or nurse. A visiting medical person may allow the children to listen through a stethoscope to hear their hearts beating. Such an experience can change a child's attitude. In addition to inviting community helpers to your kindergarten, you can also take the children to visit the people where they work. Some workers have special machines or equipment that will fascinate the children.

Field Trips and Excursions

Taking the children out of the kindergarten area itself involves great responsibility and planning. You should first visit the site to see if the place is really suitable for young children and if they can gain from the experience of visiting there. Next, make the necessary arrangements with the person(s) in charge (and double check with him a few days before the planned excursion). Be certain that the host knows how many children will be coming, their ages, the date of the visit, the time, and what would be appropriate for the children to see and/or do. Remember, the more they can actually take part in, and do, the more meaningful the experience.

Decide in advance how the children will get to the place: whether it is near enough for little children to walk or whether you will have to arrange for transportation. If cost is involved, see that it is within the limits of your budget.

Bear in mind that children's first excursions should be short, simple trips. They should return from them stimulated, but not worn out. Such visits should take place after the children have already been in school a few months and feel settled and safe with their fellow kindergarteners and with you, their teacher.

You will need parental permission for the children to make the trip, and it is wise to invite several parents to join you as helpers. Be sure there are enough adults with you for handling the number of children in your care. Always have at least one other adult with you.

Prepare the children for the trip a few days before going. Be certain that they know where they are going and why. If the children will need to wear any special clothing, to bring money for tickets or fees, or to bring their own lunches or snacks, notify the parents well in advance with all the details. Discuss these factors with the children, too. Being given such information will give them feelings of responsibility and security when they leave the safe confines of their kindergarten. It is also important to establish beforehand with the children clear rules of safety and behaviour.

Double check all your arrangements a few days before the expected trip. Have you made provisions for the children's food, toilet facilities, a place to rest if necessary? (A resting place can be under a shady tree, but do plan for such things in advance.) Have you considered the time needed for going and returning? If the children are walking, take into consideration the fact that they like to stop along the way to explore the things they see. You may want to take along a sack for holding what the children collect - stones, twigs, etc. Take with you, also, a prepared first-aid kit.

You will need to emphasise to the children that on the day of the trip, their usual daily schedule will be different. Unless a child knows this beforehand, the change - even for a promising journey - can be an unsettling and upsetting experience. Little children adjust to changes slowly.

The long and difficult part being over - the planning - enjoy the excursion. Afterward, be certain to fill the kindergarten with numerous follow-up activities: games, art activities, poems, and stories. One of the most important follow-up activities is dramatic play. Provide the children with appropriate props and outfits for dressing up and acting out what they saw.

Very soon after the visit, write a letter of thanks to your host. The children can help by drawing pictures or signing their names.

Transportation

The study of various forms of transportation is appropriate for kindergarten children. How do they travel to visit friends or relatives? Do they walk, ride on an animal or in a vehicle? Some societies have their own modes of transportation, which are unknown in other parts of the world. Make a variety of vehicles and animals from scrap materials - match boxes, maize husks, etc.

Communications

Another important topic is that of communications. How do people communicate ideas? Do they do this through newspapers? Radio? TV? Is there a special meeting place where people publicly express their opinions?

A study of communications also includes ways in which one person talks or relates to another: telephones, letters, messengers, or simple conversations. You can encourage the children to use these in their play. Manners, customs, and forms of courtesy should be explained to children. What they learn will come out in their play as they experiment with these different forms of communication.

Didactic games (lotto, puzzles).

Circle game outdoors.

Manipulative materials vary.

Games

There are many ways to give children practice in learning concepts and skills without drilling information into their heads. Didactic (teaching) materials can be pleasant to work with and still be challenging if they are designed with specific objectives in mind.

Games provide motivation to learn, and can be made and used according to your aims. Games can be used for promoting skills in classification and discrimination (e.g., likenesses and differences). They can aid in developing basic concepts, such as colour, size, and direction. They can be used to improve or sharpen memory and recognition skills. Games can be designed to suit whatever aim, age, or level of development you desire. It only takes a little time and thought to produce them.

The suggestions for games that follow in this unit are appropriate for kindergarten children. Although the games are divided into categories of particular skill requirements, the necessary skills for most games do, in fact, overlap; a game can be both manipulative and cognitive (thinking) - for example, puzzles.

MANIPULATIVE GAMES

A piece of equipment can be used as a toy or as a game. When a child uses it according to his own whim, he is using it as a toy. When, on the other hand, he uses it according to certain rules of play, it becomes a game. Toys can be used as games, and games as toys. This is particularly true of manipulative games which, as the name implies, are those in which the child must handle or manipulate objects. The purpose of such games is to give young children exercise in using and co-ordinating the small muscles of their hands and eyes.

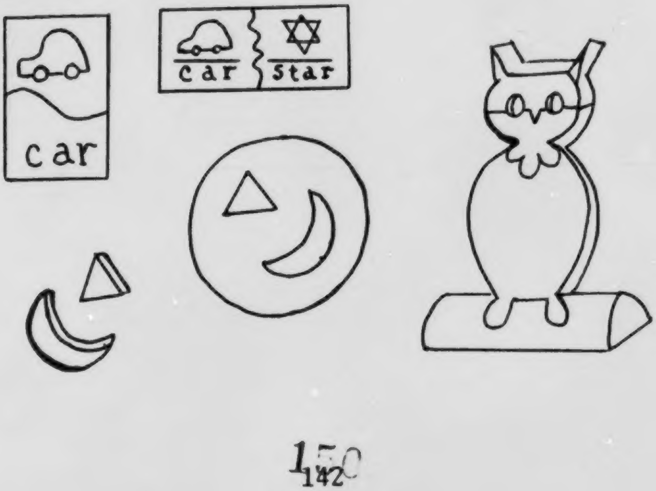
Coordination Some manipulative games are purely skill oriented - sewing cards, for example, in which a child must lace or thread a piece of wool or string in and out of already prepared holes in a cardboard and thus complete a picture or design.

Children can even make their own sewing cards. Drawing and designing their own pictures develops imagination.

Other examples of coordination games are self-help frames. These frames are usually made from four pieces of wood, onto which cloth in the shape of a jacket or shirt is attached, each closing in a different way. On one the child must zip a zipper; on another, button a series of buttons; on others still, lace, hook, snap, or whatever. The purpose of these frames is for the child to gain skill and confidence in his ability to dress himself.

Construction Activities in which a child must build or construct something by fitting pieces or forms together are known as construction activities. In some construction games, forms or blocks of wood interlock with one another or balance one on the other. Another type of construction game involves hammering small nails (or tacks) into a piece of wall-board or several thicknesses of cardboard. As the child hammers the nails or tacks, he creates a certain picture or design. A variation of this game is to stretch rubber bands around the nails to form geometric patterns.

Reconstruction Reconstruction games are those which must be taken apart and reassembled - puzzles are the best known example. There are many kinds of puzzles, each with its own approach and style. Regardless of the type, however, the concept behind each remains the same - separate pieces that must be fitted together to complete a whole. In some puzzles, the important element is the completion of a picture; in others, the completion of a form (e.g., a ball or a cube) or of a series (e.g., a numerical sequence).



You can make puzzles to give the children practice in various skills - rhyming, for example (a puzzle piece bearing the picture of a *car* interlocks with a puzzle piece bearing the picture of a *star*, etc.). Be sure to make a variety of puzzles. They should range in difficulty from very simple ones (three to four pieces) to progressively more complex ones.

COGNITIVE GAMES

Cognitive games are thinking games. Some cognitive games require the child to sort or classify information. In others, the child must arrange objects in a particular sequence or order. By watching how a child completes these tasks, you can tell how much he understands or does not understand about a concept.

Classification

Classification involves sorting, grouping, or matching. You can arrange a variety of games for promoting this skill. For instance, take several lengths of string or wool and shape them into circles. You may also use bamboo hoops or cardboard boxes, or draw circles with chalk on the floor or with a stick on the ground. The children must place a different object - buttons, stones, leaves, pinecones - into each enclosure. When you ask children to sort objects into the different enclosures, you are asking them to classify. They must recognise things that are alike and things that are different, objects that are round and objects that are square. Objects may be separated - classified - according to colour, size, or purpose.

Lotto One specific kind of classification game is called "lotto." For this, the teacher prepares several boards that are divided, usually into four or six equal parts, with a picture placed on each part. The objective is to relate to these pictures. How the child will do so depends upon the type of lotto game intended.

Most lotto games are simple games of "object lotto": the child has a series of small picture cards and must match a card to an identical picture on the lotto board. When he chooses a card, he should state what the picture is and then attempt to find a like picture on his board. If there is no match, he puts that card aside and takes another, following the same process of announcing the name of the object shown in the picture. When he succeeds in making a match, he places the card on top of its corresponding picture. When the entire board is covered by the small cards, the child may call you to check his work. Then he may take a different board.

Another lotto game is "go-together lotto." Here the child matches pictures of things which are not identical but which belong together; for example, the picture of a bird to the picture of a nest, an umbrella to rain, a key to a keyhole.

Other lotto games, all played in the same fashion, are "opposite lotto," "rhyming lotto," and "ABC lotto." The first, as the name implies, has as its objective the matching of opposites. In "rhyming lotto" the picture on the card must match one on the board that rhymes with it - house and mouse, ring and string. (The examples given here are, of course, suitable for the English language. You can easily adapt the idea to suit the language used in your kindergarten.)

"ABC lotto" combines a picture with the first letter of that word. For playing this type of lotto, the children must already be familiar with letters and their sounds. A child must match, for example, the picture of an apple with the letter A, box with B, and so forth.

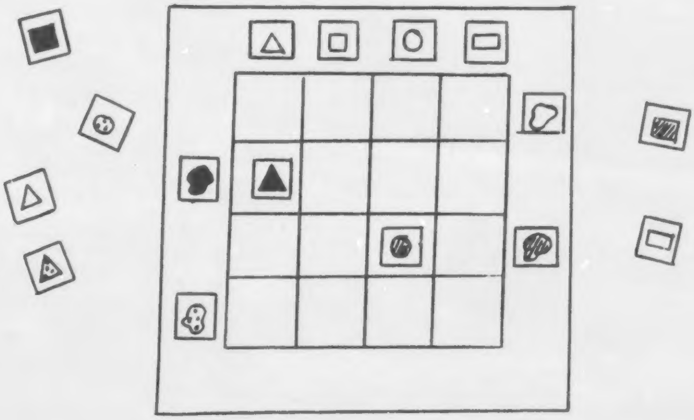
Still another kind of lotto is called "what's missing lotto." The board here is not divided into sections; instead, there is a single picture of a scene. It may be farmers plowing the field or a cooking scene in the kitchen or out of doors. Whatever the situation pictured, something is missing: the leg from a chair, the horns and udders from a cow, etc. The child must scan the picture to determine what missing objects should be included. On each small card accompanying this game there is a picture of a complete object (e.g., a cow with her udders and horns). The child must place on the board the "complete" picture card on top of the "incomplete" picture.

Dominos Dominos are small, rectangular pieces of cardboard or wood divided in half by a horizontal line. On each side of the line, there is a number or an arrangement of dots or a picture. The two sides may be alike or different. On a few of the dominos one or both of the sides may even be blank.

The game is to match like sides of the dominos - a picture of a tree with a picture of a tree, the number 2 with the number 2, three dots with three dots. Patterns can be formed as the child (or children) continues to lay down matching sides. This is the traditional domino game. You can, though, make sets of dominos for whatever concept you want to teach - colours, numbers, animals, fruits, etc.

Matrix In a matrix game the child must in effect combine and coordinate two or more variables (e.g., round and red; or large, round, and red). The matrix board is divided into 16 equal squares. Small cards, each the size of a square on the board, accompany the game. The "lead" cards are placed across the top of the board and/or along the bottom or sides.

If at the top of the board the teacher has placed a red card, and on the side of the board a circle, the child must look through his cards for a red circle. If the lead cards are yellow and a picture of a tall girl, he must find the card with a picture of (for example) a tall girl wearing a yellow dress. He then places the correct matching card on the board on a square where the two guiding variables intersect.



Patterning

Another type of cognitive skill is patterning. In patterning games, the child must duplicate simple patterns in a particular sequence or order. This can be done with coloured beads, blocks of various colours or shapes, cards, even toothpicks.

Begin with a simple pattern - perhaps alternating two colours, such as black, white; black, white, etc. Gradually make the patterns more difficult: e.g., black, black, white; black, black, white. Or, round, square, square; round, square, square. In each case, the child must infer from the pattern what should come next. He then continues the pattern as it is represented.

Sequence, Seriation

Games involving sequence or seriation require much thought. A child may be asked, for example, to remember the order of a story or an event. He may be asked to place pictures in a correct or appropriate sequence: e.g., egg, tadpole, frog; or: a boy buys a balloon, the boy walks with it, the balloon pops.

The same sort of game can be played with sounds. A child covers his eyes and listens to a series of sounds. He must then state in correct order which sounds he heard: "First I heard a whistle, then I heard water being poured...."

Boxes, tins, or rings that are graduated in size for nesting one inside the other or stacking one on top of the other are also considered seriation games.

PHYSICAL GAMES

There are many different kinds of physical games. They involve more than simple callisthenics or routine exercises. Every game that involves physical activity stresses something more than the exercise which is inherent in the game - listening skills, for example, following directions, cooperation. For little children the rules of a game should be simple and uncomplicated. Every country has its own version of these games. The following are a few examples.

In "Follow the Leader," the children must carefully observe the one designated as leader and do exactly as he does: move as he moves and go where he goes.

A similar game, in which the children must follow directions, is called "Simon Says." The leader announces his orders to the group before him by saying, "Simon says, lift both hands above your head. Simon says, lower them. Simon says, look behind you..." etc. Everytime the leader prefaces his order with the words "Simon says," the children must follow his directions. If, however, he gives an order without saying "Simon says," the children must *not* do what he tells them. (Of course, the name used - Simon or whatever - depends upon the country or area in which you teach.) This game can also be used to see whether a child recognises right from left ("Simon says, lift your left foot"). With a wrong move, a child leaves the game.

Some games make the children listen very carefully if they want to participate. Two such games are "Basket Broke" and "Duck, Duck, Goose."

In "Basket Broke" chairs are arranged in a circle and each one is occupied by a child. A leader stands in the middle. Each child chooses the name of a different fruit, which he announces to the group. The leader then says, "I am going to the market and I am going to buy and put into my basket a peach." As he says this, he walks around in front of the chairs. The child who has chosen "peach" stands up and follows behind the leader, who continues, "I am going to the market and I am going to buy and put into my basket (e.g.) a pineapple." The child who has chosen "pineapple" stands up and joins the leader and the "peach."

The game continues in this way until the leader suddenly exclaims, "The basket broke!" At this, everyone rushes to sit down on a chair. Since the leader, too, wants to sit down, there is one chair short. The child who is left standing without a chair becomes the new leader. Five year olds will know and can remember the names of many fruits.

"Duck, Duck, Goose" involves no remembering, but does require listening. It is an easy game that even three year olds can enjoy and find appealing. The children sit or squat down in a circle, pretending to be ducklings. One child, the leader walks slowly around the outside of the circle. As he does so, he gently pats each child on the shoulder or head and announces, "Duck... duck... duck..." etc. Suddenly, he taps a child, but this time exclaims, "Goose!" and begins to run around the circle. The "goose" jumps up, chases the leader, and tries to catch him. If the leader reaches the place where the "goose" had been sitting, he sits down safely and the "goose" becomes the leader. If the "goose" succeeds in catching (tagging) the leader, the leader must repeat the game and choose a new "goose."

In some games the children run away from a leader who tries to catch as many of them as he possibly can. This is not merely exercise. Each game has its own set of rules. One such example, played in many parts of the world, is "Wolf on the Path." It goes like this:

One child, playing the role of a mother sheep, stands at a home base. This can be a bush, a chalk-drawn circle, or whatever the children choose. At another point are the children who play the role of lambs. In the centre, between the two points, is the child playing the role of a wolf.

The mother sheep calls to her little lambs, "Children, children, come home!" The lambs reply, "We don't want to." Again the mother requests and the lambs refuse, saying, "We are afraid." When the mother asks why, the lambs reply, "There's a wolf on the path!" Finally, the mother requests again, "Children, children, come home!" This time, all the little lambs rush to the home base. As they do so, the wolf attempts to catch (tag) them. Whomever the wolf catches becomes the "wolf" for the next round.

A game of this type, while exhilarating, can also be frightening to very small children. It is better suited, therefore, for children who are about six years old.

Jump ropes and *balls* are an integral part of many physical games. In others, an object such as a handkerchief or a shoe is passed around in a circle. Most of these games involve a rhyme or song. Of course, there are games that follow rhymes or songs without the use of props: the children sing and act out the words of a song (e.g., "This is the way we wash our clothes...."). This is also a good way to teach language structure and vocabulary.

LANGUAGE GAMES

Language games need no equipment or props, only imagination and words. Some language games promote memory skills, some are for listening, and some are guessing games.

Memory One child begins a story by saying, "I went on a trip and I took my (e.g.) toothbrush." The next child must repeat this and add an item of his own: e.g., "I went on a trip and I took my toothbrush - and a shirt." Naturally, those children who have turns at the end of the game have more to remember than those at the beginning. By then the list may be, "I went on a trip and took my toothbrush, a shirt, pyjamas, a book... and a flower." Variations on the game can include different places or even children's names (e.g., "I went to visit Rivka and I took a cake....").

Listening Listening is both important and fun when children must match the sounds of words. Sometimes this is done by making up rhymes. Sometimes it is done by matching the final sound of one word with the beginning sound of another word (e.g., ea*r* – *r*abbi*t* – *t*ree).

Guessing In guessing games, one child makes up a riddle and the others must try to guess the answer: e.g., "I am white, fluffy, and I float in the sky. What am I?" (Ans.: a cloud.) Or: "I see three things that begin with the letter (or sound) *b*. What are they?" (e.g.: *b*lackboard, *b*ox, *b*iscuit.)

CARD GAMES

Card games can be valuable tools for recognising likeness and difference, for memory, or for a variety of skills. You design or choose the games to suit the needs of the children.

A simple card game that very young children can play is called "Snap." Whatever kind of cards is used for this game, there should be duplicates of them. Two children play, each holding a large stack of cards. Simultaneously the two children remove one card from their respective stacks and place them face up on the table or ground before them. Every time they remove and lay down a card, they must say, "Snip." If by chance the two cards placed face up are identical, the children must then call out, "Snap!" The first to recognise that the two cards are alike and to say "Snap" wins all the cards in the pile up to that point. The game can continue until one player has no cards left.

"Concentration" is another card game calling for duplicates of each picture or number. In this game all the cards are placed face down so that no one can see the numbers or pictures. The cards are usually arranged in a series of rows. Since "Concentration" is a memory game, more than two can play at a time.

One child lifts a card, peeks at it, and announces what he has seen (e.g., "an elephant"). He then replaces the card in the row exactly as it was before and lifts a second card, announcing its picture or number (e.g., "camel"). As before, he replaces the card exactly where it was before he touched it. Then his turn is finished. Another child repeats the process. He may discover, for example, "a camel" and "a goat." The object of the game is to match pairs.

The child whose turn is next will try to remember where in the row or rows the two pictures of camels were located. If he finds them ("I have... a camel... and a camel"), then he has made a match. He removes the two matching cards from the game and places them aside in his own private pile. The game ends when all the cards are gone; the child who has the most matches or pairs is the winner.

SPECIAL GAMES

You can now and then arrange a special game, such as a scavenger hunt or a treasure hunt. Both of these require a high degree of cooperation on the part of the children.

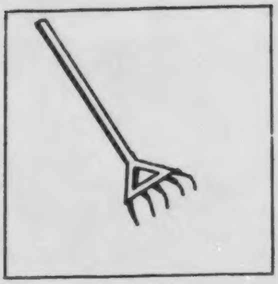
For a *scavenger hunt*, the children are divided into groups; each group is given a list of items to find, and a sack or bag for collecting things. For young children who do not yet read, their list can be drawn in picture form.

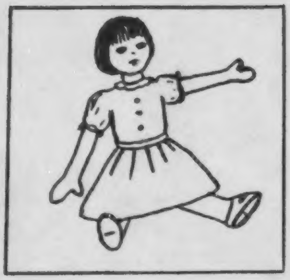
Explain to the children that they must scavenge or search for and gather all of the items on the list. When they have everything in the bag, they are to return to the teacher, who will check the contents. Items requested should be whatever is easily available to the children - a coconut husk, for example, a piece of string, a pencil, crayon, large smooth rock. The first group to return with all the items on the list is the winner.

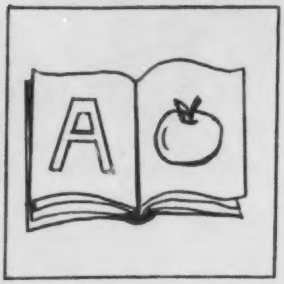
A *treasure hunt* is somewhat different. Again, the children are divided into groups, but this time they are given only one clue, a picture of something with which they are familiar. They must think very carefully, since the clue will lead them to the location of the next clue. If the picture is of a doll, for example, the next clue may be waiting in the doll corner. If the next picture clue is of a rake or hoe, the third clue may be somewhere in the garden, and so on.

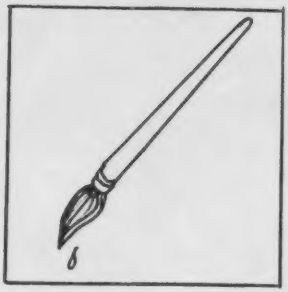
The process is repeated (the clues are followed) until the children come to the "treasure." The treasure may be some sweets, fruit, or whatever you choose it to be. Be certain there is enough to share with all the children. Competition can be frustrating for small children. Although the process of the game is stimulating and fun in itself, most kindergarten children will want to share in the prize, even if they were not the first to find the treasure.

158









Clues for a treasure hunt

Routines: washing and waking from nap.

Mid-day meal.

5. PLANNING & EVALUATION

PLANNING

Teaching necessitates planning. Without it, your lessons and programme may lack direction and be ineffective. When you plan, consider the needs of the children - their emotional needs, social needs, physical needs, and their intellectual abilities. One planning method is to build a basic time schedule around the daily routines.

ROUTINES

Routines are a necessary element of every kindergarten programme, whether the progamme is for a half day, a full day, or around-the-clock. Toileting, washing, eating, cleaning up the classroom, resting, dressing, times for arrival and departure are all part of the daily routine. If each such routine takes place at approximately the same time every day, together they help to establish the basic structure of the day.

In some kindergartens there is a check for health and cleanliness every morning, during which the teacher or headmistress takes note of the children's basic body cleanliness. Each child's hair is checked for lice as well as for neatness. His fingernails and the state of his clothing are examined. The teacher notes if the child is particularly melancholy that morning or if he seems to have some sort of adverse physical condition, such as an infection or rash. If anything about a child stands out as alarming or unusual, appropriate steps are taken to assure that the situation is looked into and taken care of.

Some kindergartens are connected to a religious body and the children may receive special instruction or may join in a morning ritual of prayer.

Regardless of the nature of your kindergarten, daily routines are essential for establishing a secure base for the children.

For many little children, carrying out routines in a new location (the kindergarten) may take some time to learn. Give them enough time to accomplish these routines comfortably. It is unpleasant and upsetting to be constantly rushed from one activity to the next.

PACING (TIMING)

Time is a delicate matter in the kindergarten years. Children must be allowed the time they need to carry out their duties and experiments successfully. Tying a shoelace takes time and concentration when you are five years old. Washing and drying hands takes much more time for a child than for an adult. Sometimes adults forget that years of experience have made routine activities second nature to them.

As the young child is not the bearer of great experience, he also is not the bearer of great patience; and time, though sometimes not enough, can sometimes be *too* much. Periods of sitting for stories or discussions should be confined to brief time segments: fifteen or twenty minutes is sufficient for a group of four year olds; younger children can sit comfortably for even less time, older children for a little more. You must, therefore, arrange the day's schedule by alternating periods of activity and quiet.

For example, because the children have been active in getting to school, you may want to begin the school day with a calming or quiet activity - a talk about the weather that day or a discussion of an up-and-coming holiday. When the children are comfortably nestled into the framework of the school setting, you can free them from the group to begin individual work.

Since children learn by doing, their work time should be full of activity. It is up to you to determine the amount of time they will work at each task. After a session in which the children are active, they should be quieted down again. Stories or music can be relaxing activities.

You will gradually develop a good sense of timing and a feel for the children's needs. This is important, since young children cannot adequately pace themselves. You have to provide the balance for them. And so the day progresses - something active, something passive, something invigorating, something calming.

CURRICULUM

Curriculum, the programme of activities that take place in the kindergarten, is influenced by seasons, holidays, and special events, as well as the particular needs of the children in your class. In some places, an already-prepared curriculum exists for the kindergarten. In most cases, however, you will need to establish your own. Try to prepare a well-balanced programme for the children - something which is stimulating but appropriate for their age levels and abilities.

SCHEDULING

The schedule you prepare for your kindergarten should include a basic daily routine and a keen awareness of pacing as you integrate the various aspects of the programme into a framework of time. The following pages contain but a few examples of the many types of schedules that are possible. Your own schedule must, of course, suit the situation in your area. For example, in some places the kindergarten opens at 8 o'clock in the morning; in others at 10.00. Every kindergarten schedule must fit the norms of the society in which it exists.

SCHEDULE FOR HALF-DAY PROGRAMME

8.00 a.m.	Arrival of children (reception)
8.15 a.m.	Group meeting for general conversation (pledge, prayer, news, songs)
8.30 a.m.	Free time (creative activities, block building, etc.)
9.25 a.m.	Clean-up time (children help to put away toys and equipment and to straighten up the room)
9.40 a.m.	Group meeting for teaching concepts
10.10 a.m.	Toileting and handwashing
10.20 a.m.	Snack
10.40 a.m.	Clean-up from snack
10.45 a.m.	Outdoor play
11.30 a.m.	Toileting and washing, tidying up
11.40 a.m.	Group meeting for story or music
12.10 p.m.	Table games and quiet activities (puzzles, manipulative toys, cognitive games, small group lessons)
12.40 p.m.	Clean-up (put away materials and games; straighten room)
12.45 p.m.	Final meeting to sum up the day
12.55 p.m.	Getting ready to go home
1.00 p.m.	Departure of children

SCHEDULE FOR FULL-DAY PROGRAMME

8.00 a.m.	Arrival of children (reception and health inspection)
8.30 a.m.	Group meeting for prayers, poems, songs, rhythms, or dances
8.45 a.m.	Activity period (creative activities and readiness activities)
9.45 a.m.	Clean-up and straightening of room
10.00 a.m.	Toileting and washing
10.10 a.m.	Light snack
10.30 a.m.	Outdoor play
11.15 a.m.	Group meeting for discussion and story
11.45 a.m.	Toileting and washing
12 noon	Lunch
12.30 p.m.	Clean-up
12.45 p.m.	Rest or sleep (nap-time)
2.30 p.m.	Toileting and washing
2.45 p.m.	Quiet activities: manipulative toys, table games, cognitive games
3.30 p.m.	Clean-up (put away games and toys)
3.40 p.m.	Washing hands
3.50 p.m.	Snack
4.10 p.m.	Outdoor play
5.00 p.m.	Toileting and washing
5.10 p.m.	Group meeting for discussion, story, flannelgraph or puppet show, finger plays, songs
5.40 p.m.	Preparing to go home
6.00 p.m.	Departure of children

SCHEDULE FOR FULL-DAY PROGRAMME

10.00 a.m.	Reception and free play outdoors
10.20 a.m.	Toileting and washing
10.30 a.m.	Group meeting for general conversation and demonstration of "new" art technique
10.40 a.m.	Free-play period
11.30 a.m.	Clean-up of classroom
11.40 a.m.	Music and rhythmics
11.50 a.m.	Organised outdoor games
12.30 p.m.	Group meeting for conversation, story, songs, games
1.10 p.m.	Free outdoor play
1.25 p.m.	Toileting and washing
1.35 p.m.	Lunch
2.00 p.m.	Clean-up
2.15 p.m.	Story and pre-reading activities
2.40 p.m.	Free outdoor play
2.55 p.m.	Science activities
3.15 p.m.	Indoor and cognitive games
3.50 p.m.	Getting ready to go home
4.00 p.m.	Departure

SCHEDULE FOR AROUND-THE-CLOCK PROGRAMME

(This is a programme that can be used in an orphanage or children's home.)

7.00 a.m.	Wake up, wash, and dress
7.30 a.m.	Breakfast
7.50 a.m.	Clean-up
8.00 a.m.	Free-play period
9.00 a.m.	Clean-up
9.15 a.m.	Group meeting
9.45 a.m.	Toileting and washing
9.55 a.m.	Snack
10.15 a.m.	Clean-up
10.20 a.m.	Outdoor play
11.20 a.m.	Toileting and washing
11.30 a.m.	Music and rhythmics
12 noon	Table games and quiet games
12.40 p.m.	Clean-up (put away games and materials)
12.50 p.m.	Toileting and washing
1.00 p.m.	Lunch
1.30 p.m.	Clean-up (remove dishes, wipe tables, etc.)
1.45 p.m.	Bath
2.15 p.m.	Nap-time (sleeping or resting)
3.30 p.m.	Wake up and dress, toileting and washing
4.00 p.m.	Snack
4.20 p.m.	Group meeting for discussion and story
4.40 p.m.	Outdoor play
5.30 p.m.	Toileting and washing
5.40 p.m.	Quiet indoor games (table toys, cognitive games)
6.15 p.m.	Clean-up
6.20 p.m.	Washing
6.30 p.m.	Dinner
7.00 p.m.	Clean-up
7.15 p.m.	Group games
7.45 p.m.	Toileting, bath, preparing for bed
8.15 p.m.	Story
8.30 p.m.	Bedtime

WEEKLY SCHEDULE

In addition to the basic daily schedule, you should also plan a schedule for the week. In some places children go to kindergarten six days a week, in other places five days or fewer. The following is a sample schedule of a five-day-a-week kindergarten programme. Notice that the routines and basic daily schedule remain essentially the same throughout. The activities within the various time slots, however, are different.

WEEKLY SCHEDULE

MONTH: ....
DATE: (from)......................... (to).....................
TEACHER: ....

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	MISCELLANEOUS NOTES
8.00	----ARRIVAL OF CHILDREN (Reception)----					
8.15	-GROUP MEETING FOR GENERAL CONVERSATION-					
				Discuss how to make bread	Preparation for visit to bakery	
8.30	------------FREE-PLAY TIME------------					
	Play-dough Painting Blocks Doll-corner	Clay Painting Cutting & Pasting Blocks Doll-corner	Collage Woodworking Crayoning Doll-corner Blocks	Make bread Crayoning Painting Blocks Doll-corner	Visit bakery	
9.25	------------CLEAN-UP TIME------------					
9.40	------------GROUP MEETING------------					
	Show pictures of different breads; bring examples; discuss & taste	Compare and classify different types of grains	Plant grain seeds; sing harvest songs and songs about bread	Discuss and play games with new vocabulary; music and songs		

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	MISCELLANEOUS NOTES
10.10	-------TOILETING AND HANDWASHING--------					
10.20	-------------SNACK--------------				(Snack at the bakery)	
10.30	-------CLEAN-UP FROM SNACK-------					
10.45	----------OUTDOOR PLAY----------	Gather grasses and stalks				
11.30	-----TOILETING, WASHING, TIDYING UP-----				Return to kindergarten	
11.40	-------------GROUP MEETING-------------					
	The story of bread	Movement and Music	Flannel board story	Puppet show	Discuss visit; make experience chart	
12.10	----TABLE GAMES and QUIET ACTIVITIES---- (Puzzles, manipulative toys, dominoes, lotto, matrix)					
12.40	--------TIDYING UP and CLEAN-UP---------					
12.45	-------MEETING TO SUM UP THE DAY--------			Taste bread and pack some for taking home		
12.55	--------PREPARE FOR GOING HOME----------					
1.00	--------DEPARTURE OF CHILDREN-----------					

CENTRAL TOPICS

Once you have a basic daily schedule and a weekly schedule, you are ready to concentrate on the exact topics you want the children to learn. You might make a list of all these topics. How do they spread out over the kindergarten school year? Do you have time for everything?

It will take you from one to two weeks to complete the study of a particular topic or theme in the kindergarten. Younger children will need to be fed the information in smaller, more digestable doses in order to absorb it. Depending upon the ages of the children in your care, therefore, plan your lessons and time accordingly.

When deciding on the concepts or themes to teach, choose central topics that are relevant to your situation. There are basically two types of central topics taught in the kindergarten. One type encompasses the *stable* and the fixed; e.g., seasons, changes in weather, nature, plants, animals, holidays, and traditions. The items in this type occur year after year with a rather predictable stability.

The second type of central topic is *dynamic* or changing: e.g., the building of a new house or road near the kindergarten, the visit of an important person, a circus coming to town, the birth of a baby brother or sister. Such events, because they do not happen all the time, tend to spark the children's interest and are, therefore, worth spending some time on.

Preparing a Central Topic

In order to teach a specific topic or theme, you must first know as much information as possible about it. The first step in planning, then, is to gather information and to define for yourself the main concepts related to the topic.

Next, you must motivate the children and awaken their interest in the topic. This is done by planning a variety of activities for them. If you usually have creative activities in the morning, continue to have them - but relate them to the central topic. If you sing songs or do dances during the day, continue to do so - but sing songs or perform dances that have something to do with the central topic. Group discussions should revolve around the central topic, etc. In this way you can integrate the particular topic or theme into the children's usual daily programme. You can (and should) prepare special cognitive games (e.g., dominoes, lotto) to reinforce the concepts of the topic.

You might consider setting up a special bulletin board for the parents that would contain some information about the topics which you are currently emphasising. In this way, the parents will have the chance to share in what their children do and learn in the kindergarten.

EXAMPLE OF SPECIAL INFORMATION FOR PARENTS BULLETIN BOARD

Subject now being studied: *Bread*

Concepts learned:

1. Bread is made from wheat or other grains.
2. Yeast makes bread rise.
3. There are different types of bread, and different shapes.

Special Activities:

Art activities; flannelboard story; growing seeds of wheat, barley, and oats; baking bread; tasting various kinds of bread.

Language: (new vocabulary words or phrases)

Loaf, slice, roll, crust, dough, flour, mix, sift, knead, bake.

Songs:

"Who's selling bread?
I'm selling bread.
Bread in loaves and bread in slices,
Sandwiches with tasty spices.
Buy bread here —
Buy bread here.

Who's selling bread?
I'm selling bread.
Bread in buns and bread like pita,
Onion rolls and rolls much sweeter.
Buy bread here —
Buy bread here."

Trip: Visit to a bakery.

Individual Lesson Plans

Every lesson takes planning and preparation. Making a formal lesson plan will help you crystallise your thinking and be more effective in presenting ideas and information to the children. Below is a basic format for a daily lesson plan.

Aim: (What is the purpose or goal of the lesson?)

Materials: (What materials, utensils, or supplies will you need for teaching this lesson?)

Preparation: (What do you need to do to or with these materials in order to be ready for this lesson?)

Method: (Exactly how will you present the lesson?)

STEP I -

STEP II -

STEP III -

etc.

Conclusion: (Bring the lesson to an end by a summary, stating what was determined during the lesson.)

Evaluation: (Having completed the lesson, you be the judge. How do you feel about the lesson as a whole? About the way the children responded? Is there anything you might do differently the next time? Why? Which aspects of the lesson pleased you in particular? Evaluating your work helps to guide your teaching in the future.)

Follow-up Activities: (What lessons or activities can you provide to reinforce what the children have just learned?)

EVALUATION

Evaluation of kindergarten children differs from the evaluation of children in primary school. In the kindergarten the children are judged by observation and not by written examinations or tests. This necessitates comprehensive written records on every child in your care.

Keeping an individual file or folder on each child will help you keep your records organised. As you gradually add to the file throughout the year, the information will speak for itself; it will enable you or a parent to assess the child's progress or position almost at a glance.

ANECDOTAL RECORDS

A kind of record that is serviceable in providing a picture of a child, his personality, his abilities, his likes and dislikes, is an anecdotal record. This consists of a series of anecdotes or comments about events that occur to the child in the kindergarten. You will need to keep some paper and a pen or pencil handy for your private use during class sessions.

Whenever you see or hear something that you think is significant, make a quick note of it. When you have the chance, put the information into the folder of the child who is the subject of the particular incident. Since these incidents usually occur when you are busy with the class as a whole, you will probably have little or no time to write a report of the happening in full. It will be sufficient to jot down a few words on the incident to remind yourself about what happened. After the children have gone home, you can then go back to the folder and write a fuller description or report.

Be certain to write the date and, if it is significant, the time of day when the event took place. As such anecdotes accumulate, you will be able to see them in their proper sequence. Here are examples of brief comments that could appear in an anecdotal record:

Heather, age 4

November 3. Heather brought in a pumpkin. She was very pleased with it and showed it to all her friends. Everyone who saw it admired it with proper respect. But when Michael remarked that her pumpkin was going to die, Heather began to cry, insisted that her pumpkin was not going to die. Michael persisted: "It will live for a few days and then it will start to rot. That's the way it is with pumpkins unless you eat them." Heather was heartbroken as it began to occur to her that Michael's information might be correct. She clutched the little pumpkin to her side throughout the day and would not let Michael near it.

Saul, Age 5

April 4. Saul's grandfather, a carpenter, came from another village for a visit. Saul was enormously pleased by this, as his grandfather makes all kinds of wonderful wooden toys for him. Saul said to me, "Did you know that my grandfather knows *everything*."

Robert, age 4

January 16. During the free-play time, Robert threw sawdust at Gerald. Lately, he has had many quarrels with his fellow classmates.

FREQUENCY CHART

When you are busy teaching little children and all are engaged in their own various activities, it is sometimes difficult to keep close account of who is doing what and when. The situation could arise, for example, that a child spends the free-play period, every day, playing with blocks. He never paints, he never tries his hand at woodworking or puzzles He never looks at books. He only works with blocks. In such a case, you would want to expand this child's base of experiences and knowledge, and to encourage him to try more things.

How does the teacher who is responsible for many children become aware of such circumstances? A simple chart can help. Take a sheet of paper and across the top write a list of all the activities you have available. Along the left margin of the paper, list the names of the children in the class. Hang this list high on the wall or on a cabinet where only you and other adults can see and use it. From time to time throughout the day, take a moment to observe who is working with which material. Note it on the chart with a check mark.

Look over the list at the end of each week. Do some children have marks indicating that they played only in the doll corner? Which children worked in many different areas? If there are any significant findings about a child, write these down on his anecdotal record (e.g.,"*Mauwra, age 5*. January 22.

Mauwra worked every day this week with the large blocks. He experimented with magnets in the science corner on Tuesday and painted pictures on Monday and on Friday. He seems to spend most of the time, however, with the blocks.")

SAMPLE FREQUENCY CHART

	Week of......................							
Activity / Child	Creative activities	Blocks	Science	Sand, water	Library corner	Manipulative toys	Cognitive games	Housekeeping corner
Charissa								
Srisombat								
Suchinda								
Pacharee								
Kariroh								
Yawvapa								

SAMPLE PROGRESS CHART

Date..................

Skills / Child	Identifies shapes	Sorts by colour	Understands number concepts 1 - 10	Recognises and names all letters of the alphabet	Cuts with scissors successfully	Solves simple puzzles	Repeats short rhymes	Follows oral directions	Works independently and with concentration
Ohad									
Oudi									
Arnon									
Karen									
Itamar									
Inbal									
Elisha									
Rachel									
Tzachi									
Limor									

Key: A - always S - sometimes N - never

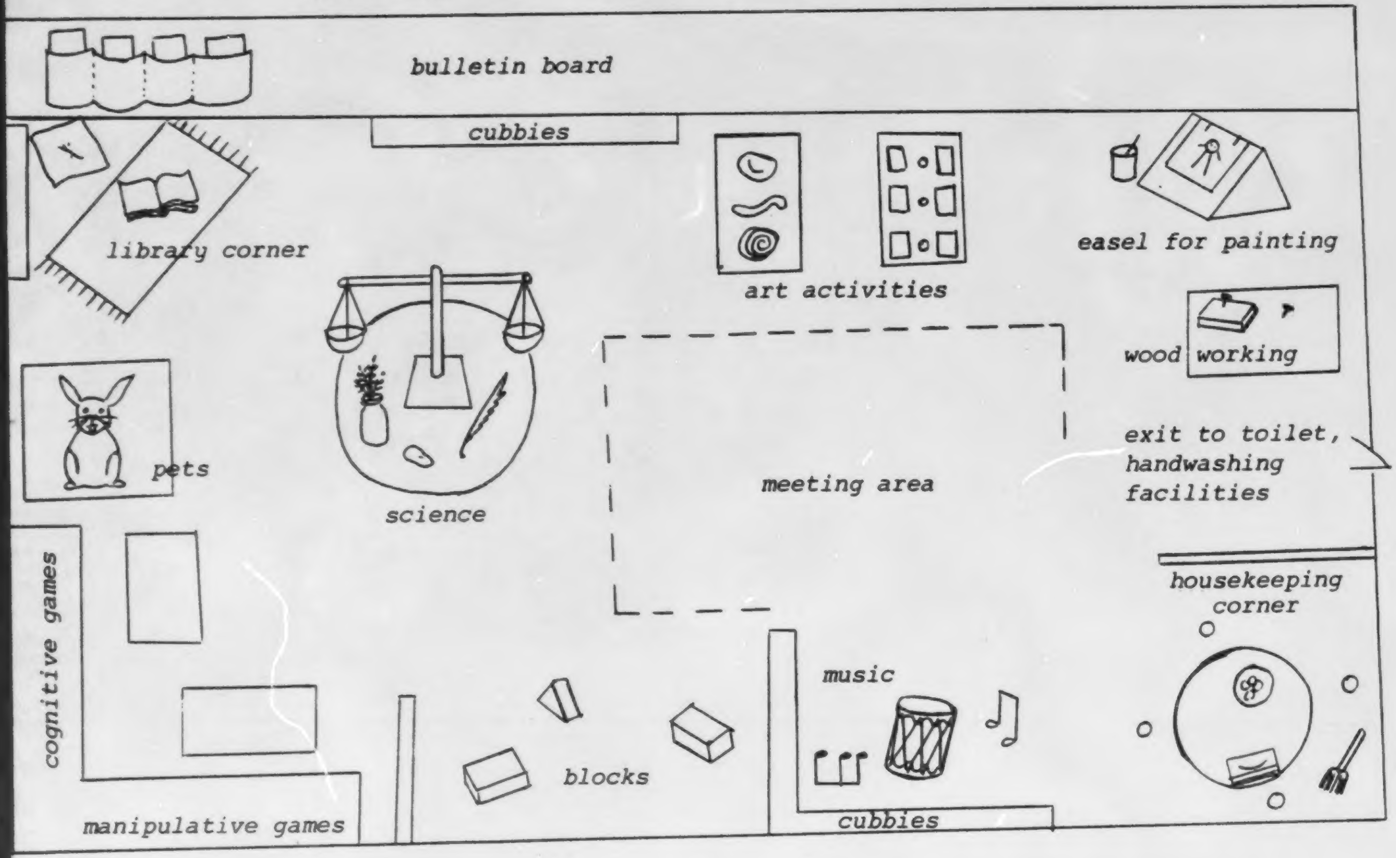
Noting the Child's Progress

The same sort of chart can be used as a record of progress. In this instance, the criteria listed across the top of the chart will be skills or aspects of child behaviour that you want to judge.

Records should be kept indicating the child's social, emotional, physical, and intellectual development. Note, for example, if he is a good listener, if he tires easily, if he is eating well. Does the child get along well with others? Is he a happy child or is he often afraid? Information about the children can be recorded in chart form or you can write individual summaries.

Throughout the school year, keep samples of various types of art work that each child has done - paintings, drawings, collage, etc. Put them in the child's folder. By writing the name and date on each piece of work, you will be able to look back at them and see the various stages of progress as the child develops.

One Suggested Model of a Kindergarten Classroom


bulletin board
cubbies
library corner
art activities
easel for painting
wood working
exit to toilet, handwashing facilities
pets
science
meeting area
cognitive games
housekeeping corner
music
blocks
manipulative games
cubbies

In a kibbutz (collective settlement).

Home visit in a village.

6. PARENTS

When a child leaves home for kindergarten, many unknowns exist for him and for his parents as well. Particularly if they have never had a child in kindergarten before, parents may have many questions. It is up to you to answer them. Do not block parents out from the kindergarten scene. After all, the children you teach are *their* children, and few things are more important and beloved to a parent than his children. Parents have a right to be involved, and also a responsibility. Encourage them to visit your kindergarten and make them feel welcome. Their feelings influence their children's feelings. If a child sees that his parents are happy about his going to kindergarten, he too will be glad to attend. In the end, it is the child who benefits the most from a close parent-teacher relationship.

Some children are hesitant at first about being left in the kindergarten with no one they know. If a child seems to need a familiar figure, encourage a parent or grandparent to stay with him in the kindergarten for the first few days until the child adjusts. Note whether it is the child who has parent-separation problems or whether it is the parent who has difficulty in leaving the child.

Parent Involvement

Parents will feel more involved if they are given an understanding of the kindergarten programme and made to feel an important part of what takes place. Schedule meetings for a time of the day when parents can attend. Perhaps other relatives would like to join them.

You can share information at these meetings by passing out simple, printed matter. Or you might want to have some kind of programme, such as films, slides or a role-play situation. Discussions may prove successful, since parents learn from one another. They find that they are not alone in their situations. As parents share their ideas and feelings, you too will have an opportunity to learn from them and about them.

You will be able to work with children more successfully if you have a better understanding of their home lives and individual backgrounds.

Draw the parents to your doorstep with informative lectures about nutrition, child development, special problems of childhood (bedwetting, thumbsucking, late bedtime, etc.). Perhaps some parents would like to put on a play or skit that relates to a common problem. Parents can be an enormous asset to the kindergarten once they understand what it is all about and how they can contribute.

Light refreshments can help to give meetings a more casual, informal, and friendly air. Check with parents in advance to see who is willing to help with this, and make arrangements accordingly.

What role do the fathers play with regard to their children and the kindergarten? In some cultures, fathers stay far away from the kindergarten, claiming that anything to do with children is "women's work"; in other cultures, *only* the father appears, the mother being restricted to the home environment.

Hold a workshop for "Fathers Only" and a separate one for "Mothers Only." These workshops can take several forms. You may want to present the parents with an opportunity to go through the same kinds of activities that their children do during the kindergarten day. Such a workshop would give parents a better understanding of what their children experience and learn.

A workshop could also be one in which parents make or repair equipment, materials, and toys for the kindergarten (soft balls of cloth or yarn, rag dolls, puppets, bean bags, puzzles, whittled animals and figures, towel racks). Or you may want to teach the parents various kinds of games to play with their children. As you build up your supply of toys, games, and books, you may be able to establish a lending library with them. That would enable parents who cannot afford to purchase such items to have an opportunity to offer their children a variety of stimulating activities at home. If the parent spends time reading or playing games with his child, it will enhance not only the parent-child relationship, but the overall kindergarten programme as well.

Individual Contact

Not all contacts with parents need be in large, group meetings. You may arrange private conferences with one or both parents. These will give you an opportunity to learn how the parents feel about their child and what they want for him. Do both parents feel the same way?

Be supportive. It is not easy to be a parent. If parents are open enough to share personal information with you listen respectfully and, if possible, be reassuring; but by all means, keep the information to yourself. You are professional and should not discuss this information with anyone who is not professionally involved.

Maintain contact with the parents throughout the school year. It is preferable to have many brief conferences than to hold one long one at the end of the year. You can also maintain contact with parents through letters, newsletters, or phone calls.

A word or two with a parent in the morning as he brings his child to kindergarten may give you helpful information. Perhaps someone is sick in the family or the family has a special visitor. A special bulletin board in the entry with information just for parents can also do much to further communications. (See chapter on "Planning and Evaluation.")

In addition to parents visiting the school, you should take the initiative to visit the home. Look for appropriate times to make home visits - perhaps when the child is ill or when there is a new baby in the family. Whether the parents visit the kindergarten or you visit the home, keep written records of all your encounters. These should be confidential and should include your impressions and recommendations, as well as an account of what took place during the encounter.

You may want to prepare records for parents to keep. Give the parents guide questions for observing their children. If the parents know how to read and write, ask them to note their responses. Some suggested questions: Does your child interact with other children? How? With whom does he prefer to play? In what activities does your child engage? For how long? Does he seem to enjoy playing by himself? Does he initiate activities or does he depend upon suggestions? Is he willing to listen to others? What is his relationship with adults? Can he accept limits? How does he handle his feelings? How does he seem to feel about himself?

Parents can be a tremendous resource to the kindergarten. Perhaps some would like to work as volunteers in the classroom: to tell stories to the children or teach them some songs. Some parents may enrich the programme by playing a musical instrument or introducing an unusual pet. Parents may bake or prepare food for the children. Some parents may want to plan a meeting. Encourage them to do so.

Whatever your parent programme, respect for cultural and ethnic differences is very important. (For further information about parent programmes, see Appendices 2 and 3.) If you are open and friendly, the parents will readily share their customs and traditions with you. Your awareness and sensitivity will benefit you as you work to give their children a warm and satisfying year in kindergarten.

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Appendix 1

A COURSE PROSPECTUS
AT THE MOUNT CARMEL INTERNATIONAL TRAINING CENTRE

ADMISSION REQUIREMENTS

The course is open to participants between the ages of 25 and 40. Candidates are expected to have 12 years of formal schooling, teacher training, at least five years experience in teaching young children; and to be presently employed in the field of preschool education.

A good command of written and spoken English is essential.

PROCEDURES

Subjects are presented in lectures and elaborated in small group discussions. Use is made of case material and reports on participants' work in their communities.

Studies are intensive: five and a half days a week of class and practical work. Saturday afternoons and Sundays are free. Participants are expected to use the library facilities for their individual study and research in preparing written assignments. Individual tutoring and counselling are available.

Regular observations of local kindergartens will be made parallel with the classwork.

Study visits to other educational institutions and to social services are an integral part of the curriculum.

Field work, in which participants apply techniques acquired in the course, concludes the studies.

Details of these procedures follow.

PROGRAMME OF STUDIES

Child Psychology

The child as an individual
Infancy to school age
Heredity and environment
Various theories of child development
Study of the child:
  sensory-motor development
  emotional-social development
  intellectual development
  language development
The special child
Aspects of child behaviour
School readiness

Pedagogy

Institutions for early childhood education: their goals and functions
Organising an educational environment
Language arts:
  storytelling
  puppet show
  rhymes
  children's literature
Learning through play:
  dramatic play
  creative activities
  cognitive games — blocks, sand, water
Nature study and science experiences
Music and movement
Outdoor activities

Observation in Kindergartens

The theoretical pedagogical studies are complemented by weekly visits to kindergartens, where observation and practical work are guided by a tutor. Visits are followed up by feedback and discussion in small groups.

Curriculum Development

Structures of knowledge:
  presentation of various curricular areas
Discussion of philosophies and approaches
Principles of curriculum development:
  planning — organising — evaluation
Methodology in teaching reading, writing, and mathematics

Community Development

Definition and principles
Learning to know the community, its needs, and resources
Understanding changing relationships within the family and the community
Role of the kindergarten teacher in the community
Coordination with other community services
Recruitment and training of volunteers

Group Dynamics

The group and the individual member
Group formation and structure
Verbal and non-verbal communication
Leadership
Use of the group to bring about social change
Involving parents and other groups

Supervision

The nature of supervision:
  inspection — guidance — consultation
Principles and methods of supervision
Developing competence for supervision
Training of staff:
  refresher courses
  in-service training
  para-professionals
Evaluation of programmes and of staff
The role of the supervisor in the making and implementing of education policies

Hygiene and Health

Physical and mental health
Preventive medicine — infectious diseases
Mother and child-care services
Health problems and nutrition
Hygiene and health services in the kindergarten
The role of the teacher in hygiene
Safety and first aid

Natural Sciences

Observation of nature
Planning a garden for young children
Developing a scientific approach
Basic experiments (seed germination, growing plants in water, cuttings)
Care of pets in the kindergarten

Music and Movement

Learning and expression through movement
Coordination and motor activity
Use of environment and materials to motivate activity
Outdoor and indoor games
Sound discrimination and creativity
Songs and dances

Handicrafts

Creative activities:
  drawing, painting, clay modelling, pasting,
  papier maché
Preparation of simple cognitive equipment and teaching aids
Use of waste materials for making toys, puppets, and equipment
Making percussion instruments from local plants

Study Visits

In addition to observation of kindergarten procedure, participants visit day-care centres in rural and urban areas, child-care clinics, special education services, teacher training seminars, and other relevant institutions.

Field Work

Supervised, transitional practice period is provided, whose purpose is for participants to exercise new approaches and methods acquired during the course. The field work is undertaken within the framework of local kindergartens, in cooperation with their teachers and supervisors. (This field work usually takes place in a country that has a population and cultural setting that is familiar to the participants.)

Appendix 2

Dr. Avima Lombard of the Hebrew University in Jerusalem, Israel, has founded parent education programmes aimed at helping disadvantaged women work educationally with their kindergarten-age children.

The following article by Judy Krausz gives a detailed description of the development and success of these programmes. (Taken from SHALOM, Magazine for Alumni of Israel Training Courses, Jerusalem, 1977 [1], p. 10.)

MOTHER IS THE FIRST TEACHER

Two children enter first grade. Ami is alive, eager to learn, picks up everything the teacher says, and is reading by the end of his first month at school. Rami is restless, unable to concentrate and sometimes sullen; he fidgets and often disturbs activities going on in class. By the end of the first year, he may be able to read a few words, with difficulty, and is probably a confirmed trouble-maker. Why?

More and more educational psychologists are drawing the conclusion that a child's experience before he enters the first grade can be a make-or-break factor in school success for the rest of his life.

Ami, the alive, alert boy who picked up reading so quickly, has probably come from a well-off, or at least financially secure, family, where both parents themselves have finished high school, maybe even university. He is more than likely one of only two or three children, has had lots of his mother's time and attention, has been played with and read to. By the time he reaches first grade, he has had the equivalent of several years preschooling.

Rami, on the other hand, will most likely have come from a large family, crowded into a small living area. His mother and father are poor, and most probably have not completed more than eight grades of school; one of his parents may even be illiterate. His mother, overworked and harassed, may well consider her job done when she manages to take care of his physical needs, feeding him regularly, and clothing him adequately. Entering his first grade of school, Rami arrives as a stranger in a foreign land.

This simple set of circumstances can have far-reaching social implications; for Rami himself, and his sisters and brothers, may well grow up to become the same kind of parents that their mothers and fathers were. The limitations of the parent generation seem destined to be transmitted to the children. What is being done to help them succeed in school?

HIPPY

Among the many people in Israel's social services addressing themselves to this problem is a team of Hebrew University educators affiliated with the Research Institute for Innovation in Education (a project sponsored by the National Council of Jewish Women in the U.S.A.) who have been developing and testing ingenious solutions. One of the most successful is the *Home Instruction Programme for Preschool Youngsters* (HIPPY), tested several years ago in poor neighbourhoods in Tel Aviv and Jerusalem, and now operating in 35 towns throughout the country, involving 3,200 families. The idea of the programme is to guide the mother in educating her preschool child at home, through a three-year series of carefully prepared, but uncomplicated, exercises and games that introduce concepts of numbers and words.

One place where HIPPY is at work is in Hatzor, a ragged town of 5,000, high in the hills of Galilee, with ragged rows of housing projects clinging to the mountain slope. Hatzor is one of Israel's 40-odd development towns hastily created to house the masses of immigrants who streamed into the new State after its independence in 1948. They came primarily from Arab lands, with few skills and virtually no education, but with high hopes for their own future and that of the new Jewish nation.

The government, forced to give highest priority to continuing security demands, managed to provide the newcomers with tiny flats and basic medical and social services. But as the years passed, Hatzor became a "revolving door" community which residents left as soon as they could, to be replaced by newer immigrants. Remote, both physically and socially, from the mainstream of Israeli life, with a lagging economy and an unsophisticated population, Hatzor had become a homogeneous oasis of immigrants, nearly all of North African origin, with no way of breaking out of their disadvantaged environment.

Many families have six and more children in two-room flats. Most of the adults have had little more than eight years of education, and some are illiterate. A high proportion require on-going welfare assistance. And while no one goes hungry and everyone has enough to wear, there is another kind of poverty in Hatzor: hardly any home has a shelf of books, or a toy or game, or a quiet corner for proper preparation of lessons.

Shoshana is a young Hatzor mother who participates in the programme with her child. She is also a paraprofessional HIPPY counsellor, with 15 families in her charge. Purposeful and persuasive, she visits each mother once a week, collecting the previous week's exercise sheets which the child has worked on, then introducing the next week's work. Shoshana receives guidance in her work from the regional coordinator, who has been trained by the Hebrew University Institute.

One person she visits is Ziva, 26, mother of three, pregnant, who awaits Shoshana's arrival with steaming cups of Turkish coffee, her two-room flat sparkling clean and tidy. Ziva hands over her 6-year-old son's work of the past week — mimeographed workpages filled in with dots and lines, pictures that have been cut out and pasted. Ziva's child used to stutter but doesn't any longer. Shoshana is satisfied, but shows Ziva where the boy could have been guided to complete certain exercises more fully.

With Ziva, she reviews next week's material, which introduces the concept of the number 5. "You will need 5 wooden matches and a small cup for this exercise," the workbook instructions state to the mother. She must also prepare cardboard squares and triangles and have a Lira coin available for another exercise. There is a lotto-style game to be played by the child, and the mother must cut out a set of pictures in advance. The materials are imaginative and varied, but simple. There are mazes and dots to connect that form Hebrew letters, and a brightly illustrated storybook, from which the child must identify certain kinds of pictures.

Tests have shown that the children who enter school after three years of the HIPPY programme perform significantly better than do their peers in reading and arithmetic. There is another, longer-range achievement as well.

Founder of the programme, Dr. Avima Lombard, a faculty member of the Hebrew University School of Education, and a leader in innovative education for the disadvantaged in Israel, points out: "It is the mother who is the effective and potential educational and socialisation factor. Our target is to change her concept of herself and her role, through successful work with her child." Noting the built-in success factor both for mother and child, a sense of immediate achievement because of the nature of the exercises, Dr. Lombard has observed that both persons are eager for each week's new material — which accounts for the remarkably low drop-out rate from the programme over the three-year period, despite the difficult social circumstances of many of the families.

Yet another level of success is among the women selected and trained as paraprofessional aides. Although they are peers of the participants in the programme, living in the same neighbourhood, and although they earn only a modest sum for this part-time work, they have gained a new status in their families and in the community.

HATAF

If a head-start programme for children aged 4 to 6 is so successful, why not begin earlier? Two years ago, Dr. Lombard initiated another programme to do just that. Called *Home Activities for Toddlers and their Families* (HATAF) and patterned on the HIPPY model, the project aims at the critical 1-to-3-year age group, when language begins to develop.

In this programme, even more than its predecessor, the focus is on the young mother, specifically the first-time mother from a culturally deprived background. "If a teacher receives supervision throughout her career, why shouldn't a mother?" This is the reasoning of Judy Kugelmas, project coordinator, who continues: "Early childhood programmes really do have to involve the parents; for if the parent does not understand the child, he cannot maximise the child's gains."

Again, the instruction is transmitted by a counsellor who is not a professional educator, but rather a successful mother, and who in this case has some secondary school education. She serves as model and guide.

The young families are selected by nurses at the local mother-and-baby clinics, which provide free infant-care and innoculations throughout Israel. During the weekly one-hour visit by the counsellor, the mother masters a variety of play activities geared to the gradual development of the baby, which in most cases had never occurred to her before, although they invariably involve inexpensive, everyday materials. A baby of 14 or 15 months is given paper and pencil and, to the astonishment of his mother, he scribbles. He can sit on his mother's lap and look at picture-books, turning the pages himself, identifying simple objects at first, then more complex ideas, until at about the age of three-and-a-half he is ready to hear the story as well.

The mother is shown how an everyday object, like clothespins, can be strung, or clipped on and off a box, or sorted by colour and shape; how a doll can be imagined to be a baby going to the store with its mother, or to the doctor; how a baby can play a rolling game with a ball, and later learn to toss it into a pot.

These mother-child interchanges can last as briefly as a minute or two — the mother is taught how brief the baby's attention span is — but their importance is great.

Now in a pilot stage in two neighbourhoods in Jerusalem, with the initial field work being carefully evaluated, the HATAF programme is scheduled to be introduced into several more areas of the city and later, if proven effective, to all parts of the country. The mother-and-child network of clinics, long interested in expanding educational services to the mother, has welcomed this research project enthusiastically, and sees in it an ideal extension of its work.

* * *

With the original home-instruction project for 4-to-6 year olds likely to become an integral part of the country's educational system, and the baby programme well received, the research team emphasises as a key factor the importance of tailoring such projects to the local milieu. Stories, pictures, toys, and games — these tools must be integral in the cultural consciousness of the mothers and the children for the project to succeed.

In the new community centre of Hatzor, where that town's HIPPY programme for 105 families is coordinated. Eli Oren, the centre's 29-year-old director, sums up the needs for such innovative projects: "Our first goal is to make the people feel they are human beings, open their eyes, make them know what they need. We can't go to the government to complain all the time — we must first demand things of ourselves. Now, with programmes like HIPPY, we have arrived at the beginning."

Appendix 3

PARENT-SCHOOL COOPERATION IN A CHANGING SOCIETY: TEACHERS LEARNING FROM DISADVANTAGED PARENTS

by

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(This article has been edited by the author for the purposes of the Handbook, with permission of Dr. Nir-Janiv.)

Project K.E.D.M.A., a Hebrew abbreviation for "Parent-Teacher Group Discussions," was conducted on behalf of the Ministry of Education and sponsored by the Henrietta Szold Institute of Research in Jerusalem in 1972.

The Theoretical Background

The project is geared to enable parents, especially disadvantaged parents, to feel more confident in themselves as human beings and as parents.

There are three theoretical aspects to this project: the psychological aspect, the educational aspect, and the philosophical one.

The Psychological Aspect

The failure of the disadvantaged child at school is one of the greatest concerns of educators all over the world. Many systems, funds, curricula, theories, and experiments have attempted to find efficient ways to overcome the failure of children and the frustration this causes their parents.

Until the last two or three years, parent education was one-sided: teachers taught parents. My hypothesis was that if teachers would learn from parents, they could better teach their children. The child who comes to school at the age of three, four, or five has already an intellectual structure by virtue of his experience at home. His parents have built into their child a cognitive pattern and a reservoir of associations, perhaps a way of learning, according to their own experiences and socio-cultural background.

A study by researchers Robert Hess and Virginia Shipman indicates that the educatability of the child is crucial. By educatability they mean the orientation skills and motivation that prepare the child to learn in a formal school situation. The focal point of their research dealt with the discrepancies between the behaviour of families of different socio-economic classes and the requirements for academic performance set by schools. Their finds show that social experiences of children affect their cognitive behaviour and eventually their academic performances. Patterns developed before formal schooling can either impede or enhance the child's success in the academic setting. From the point of view of these researchers, the cognitive development of children can best be understood in terms of mother-child interaction.

Teachers ignorant of parent-child interaction at home can impede children's cognitive, emotional, and social development and growth. Therefore, teachers must be aware of parents' methods and interests in order to create a more integrated environment and in order to make schooling for young children meaningful and relevant.

The Educational Aspect

In order to reconstruct parents' positive attitudes to[illegible]rd themselves and their children, project K.E.D.M.A. has [illegible] to upgrade their past, their culture, and their values. Such an approach can enhance their role as parents. At the same time, teachers discover a wide range of cultural values, a variety of habits, and interesting ways of child rearing. All this rich information and understanding of families of different cultures can develop more sensitive and flexible teachers and educators.

The Philosophical Aspect

A pluralistic approach to culture — everyone has the right to be different and equal — is the basis for creating the I-Thou dialogue between parents and teachers. As for the child, he feels that the most "significant people" in his life, mother and teacher, care together and cooperate to create an optimal environment and meaningful cosmos, where he belongs, creates, and acts.

In order to create such a climate of empathy and openness, we tried the method of group discussions. The teacher was the passive leader and the parents talked and expressed their ideas and points of view about child-rearing. The content of the group discussions dealt with the parents' past, with their opinions about "the good child," how they teach a child to be "good," and how their parents taught them to be "good." Other kinds of questions the parents discussed were "didactic" questions: How do you teach children to count? How do you teach them colours, family relationships, new words, and stories? What are the stories parents remember from their childhood?

Parents were very active during the group discussions. In the beginning they were very reticent. They could not believe that the teacher was asking *them* for advice. They were slow in thinking and in talking. But during the year they became more and more trustful and articulate.

The Methodology

The sample consisted of 269 parents from disadvantaged communities and 90 parents from middle-class communities. Only 19 parents dropped out. There were 13 teachers participating in the project. Nine of them worked with disadvantaged children and four teachers with middle-class children. The teachers were selected on one condition: that they be ready to spend their time working with parents. The children were 4 and 5 years old.

A pilot project was organised with 20 parents from disadvantaged communities. I led a group discussion with them, asking them how they teach their children. The parents were surprised, "How come you, the professional, ask us such a question? We don't teach, teachers teach."

A father was the first who became aware that he teaches his child. "I teach my son arithmetic — I teach him to count. We climb the stairs and we count: up — 1, 2. 3, 4, 5; down — 5, 4, 3, 2, 1." A mother told us how she teaches her child to count: "We are ten members in our family, so my daughter counts everything: 10 beds, 10 shirts, 10 plates, etc." Another mother told us how she teaches colours: "I give my child sweets of different colours — red, white, green. My daughter always chooses the red, she knows colours." The parents became very excited and even described our discussion as "so beautiful, like a wedding."

The actual research started with interviews of parents and teachers. The questionnaires dealt with the following topics: parents' attitudes to their ethnic cultures; parents' educational interaction with their children; and parents' teaching strategies. Teachers were asked about their attitudes to their profession, teachers' educational activities in the kindergarten, and their teaching strategies. The field work began in January 1971.

There were 9 group meetings. Every teacher had 3 groups of parents — 10 parents in a group. The parents came voluntarily, the teachers were paid.

The Findings

Our budget was small, and we could measure statistically only one variable: the changes that occurred in teachers' attitudes — to parents, to their profession, and to their work.

We chose two methods of evaluation: the pre-test and the post-test method and a comparative method — a control group. The teachers were matched by age, teaching experience, background, geographical areas, and the economic status of the children they work with. Teachers' answers were expressed in written form.

In comparing the answers of the pre-test and the post-test, all 13 teachers expressed a deep appreciation of their profession as kindergarten teachers. Their common feeling in the post-test (after the group discussions with the parents) was that their profession was now more meaningful, that they had become "better people, more sensitive, and more ready to listen to others."

Teachers indicated that a new kind of relationship was born: teachers trust parents and parents trust teachers. Teachers discovered that parents from poor and disadvantaged communities are worthwhile human beings who can enrich teachers' personalities and add a new dimension to their educational interactions with children.

Another interesting finding was that parents changed teachers' concepts of values. In the post-test they expressed a more relativistic-pluralistic approach to values. This is a very important shift for teachers who work in a multi-cultural society such as ours.

Teachers began to integrate in school curricula Middle East stories that they learned from the parents during the group discussions.

Teachers' attitudes toward didactic activity was interesting. Five of the 13 teachers applied the method of group dynamics with the children. Two teachers asked the children the same questions they discussed with the parents, recorded the answers, and played back the answers to the parents.

To validate the changes in teachers' attitudes, we compared our experimental teachers with a control group. The difference between the teachers' attitudes toward disadvantaged parents was statistically significant. The control group distrusted parents as a resource of information and indicated negative answers to the question: "Can parents change your personality?" They even rejected parents as active participants in school curricula.